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### CASE REPORT : AN UNUSUAL CASE OF DUODENAL ULCER IN A YOUNG BOY WITH ACHLORHYDRIA

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The association of persistent achlorhydria with duodenal ulcer is a rare phenomenon. Some authorities are emphatic that in the presence of a histamine-fast achlorhydria the diagnosis of duodenal ulcer should not be considered.

A month elapsed before the patient was completely free of symptoms; he was kept in hospital for a further 3 weeks on a

A.K., a Coloured youth aged 14 years, was admitted to Groote Schuur Hospital on 27 January 1954, complaining of severe epigastric pain which came on half an hour after meals and lasted an hour or so, and which was occasionally present on waking in the morning. It would be present for months at a time, but there were long periods of freedom as well. The total duration of symptoms was 2 years. The patient localized the pain accurately to a point midway between the umbilicus and the xiphisternum. It was aggravated by fatty foods and partially relieved by milk and such soft foods as his parents could afford. On occasion the pain was associated with vomiting which relieved his discomfort slightly; his appetite was poor and he had lost weight.

He was the eldest of a family of 4 children. The parents were alive and well. The patient himself had never been ill before; he was happy at school and there were apparently no family conflicts.

On examination he was found to be a thin but sturdy boy, undersized for his age, weighing 76 lbs. He did not appear nervous and cooperated well throughout the examination. The respiratory, nervous and urogenital systems were normal. There was some tenderness on deep pressure in the mid-epigastrium but no masses were felt. Haemoglobin 14 g. %; E.S.R. 27 minutes (Westgren). White blood-cells 6,150 per c. mm. with normal differential count. Wassermann reaction negative. Mantoux reaction negative. Test for occult blood negative.

A barium meal revealed the oesophagus and stomach as normal. However, a constant ulcer niche was seen at the base of the duodenal cap, with mucosal folds radiating towards it; the cap was spastic, tender and deformed (Fig. 1).

A fractional test meal revealed a histamine-fast achlorhydria. This was an interesting surprise and to obviate the possibility of an error the test was twice repeated with the same result. A cholecystogram showed a normal gall-bladder with no adhesions to the duodenum.

Treatment was begun with a modified ulcer diet, antacids, antispasmodics, and sedatives. Little or no relief was obtained and on occasions it was necessary to give the patient 50 mg. of pethidine orally before a feed. A milk drip was therefore commenced, with definite benefit, but he could not tolerate the stomach tube and vomited repeatedly. Citrated milk given 2-hourly with antacids and antispasmodics finally proved the most efficacious line of treatment.

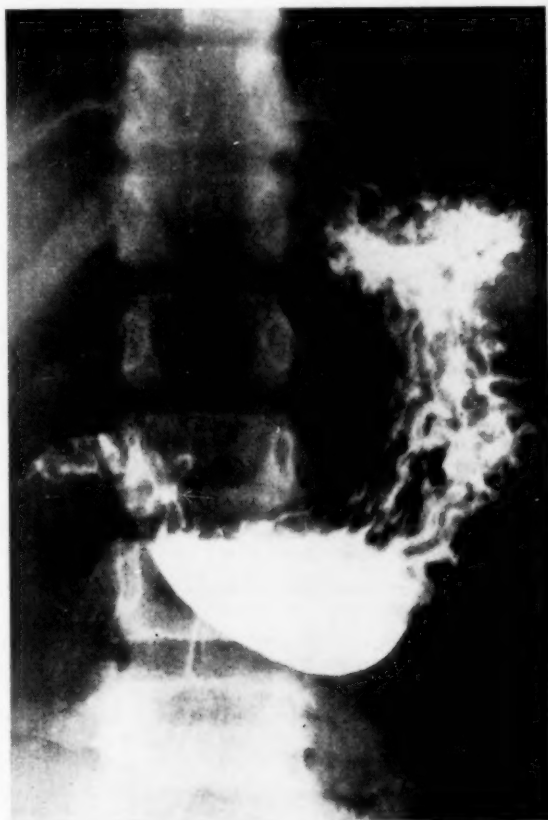


Fig. 1. Barium meal. Ulcer niche in the base of the duodenal cap. Cap spastic and deformed.

light diet and antacids, during which time the fractional test meal and the barium meal were repeated. X-rays showed a small fleck of barium still present in the base of the cap but there was no doubt that the ulcer had practically healed.

The patient was discharged with strict instructions about his diet (bearing in mind his socio-economic difficulties), and a liberal supply of antacids was given to him. On 7 June 1954—almost 3 months after discharge he returned for a follow-up. His weight had increased to 85 lb., and he reported that he was free of pain. A third barium meal revealed a normal duodenum.

Cases of duodenal ulcer with achlorhydria have been reported from time to time. Ruffin and Dick<sup>1</sup> demonstrated 24 cases of achlorhydria in 419 patients with proven duodenal ulcer. Braimbridge<sup>2</sup> cited the case of a 40-year-old woman with a typical duodenal ulcer, shown on X-ray and confirmed at operation, with histamine-fast achlorhydria. Kauver and Leiter<sup>3</sup> reported 2 cases of achlorhydria associated with duodenal ulcer demonstrated by X-ray, and associated also with gall-bladder disease found on laparotomy. Sacks<sup>4</sup> recently reported a case of duodenal ulcer radiologically confirmed, in the presence of histamine-fast achlorhydria.

For such a diagnosis to be proved, 2 criteria must be fulfilled. Firstly, an ulcer must be demon-

strated by surgery or autopsy; and secondly achlorhydria by repeated test meals. In the case reported here the diagnosis of duodenal ulcer depended on the clinical history and repeated radiological findings. Four test meals with histamine as the gastric stimulant were carried out, achlorhydria was found to be present each time.

#### SUMMARY

A case of duodenal ulcer in a young boy associated with persistent histamine-fast achlorhydria is presented. Serial X-rays and repeated fractional test meals were carried out to substantiate the diagnosis.

I wish to express my sincere thanks to Dr. A. Marais Moll, of Groote Schuur Hospital, for permission to publish this case and to Dr. Louis Mirvish, of the same hospital, for his helpful advice and encouragement.

#### REFERENCES

1. Ruffin, J. M. and Dick, M. (1940, 1939): *Ann. Intern. Med.*, **12**, 162.
2. Braimbridge, C. V. (1937): *E. Afr. Med. J.*, **14**, 172.
3. Kauver, A. J. and Leiter, L. W. (1950): *Amer. J. Gastroenterol.*, **15**, 550.
4. Sacks, I. (1954): *S. Afr. Med. J.*, **28**, 946.

### MEDICAL PRACTITIONERS AND UNQUALIFIED MIDWIVES

#### CORRESPONDENCE WITH REGISTRAR OF SOUTH AFRICAN MEDICAL AND DENTAL COUNCIL

Correspondence on the question of Medical Practitioners availing themselves of the services of unqualified midwives which has been exchanged between the Editor of the *Journal* and the Registrar of the South African Medical and Dental Council is published below.

On 10 November 1954, the Editor wrote to the Registrar: 'We published in the *Journal*<sup>1</sup> a report of the meeting of the South African Medical and Dental Council which was held on 20-23 September 1954. Dr. Lance Impey has spoken to me about the following item on page 875 of the *Journal* printed under the heading "Council Decisions": "*Unqualified Midwife*. There is no objection to a medical practitioner availing himself of the services of an unqualified midwife". Dr. Impey says that there should have been added some such words as "if no qualified midwife is available". Will you kindly let me know whether this is so? It might be possible to insert a note in the *Journal* to that effect.

'May I mention some points of view that occur to me? In the first place, it is not illegal for an unregistered midwife to practise midwifery (except in the few "prescribed areas" within the meaning of the Medical Dental and Pharmacy Act) provided her name has been entered on the list kept by the local authority for this purpose (under the Public Health Act). If an unregistered midwife practising under these conditions calls in a doctor to a patient in emergency, I suppose the doctor is acting legally and ethically in answering the call.

'Another point is this: Is there anything illegal in an unregistered woman, whether she is accustomed to practise as a midwife or not, acting as a maternity nurse (whether in a "prescribed area" or not) in a midwifery case attended by a doctor? I imagine not, for the reason that she is not acting as a midwife; and I imagine therefore that such an association does not imply any illegal or unethical action on the part of the doctor.'

On 17 November the Registrar acknowledged the above letter and added 'I shall place your letter before the Executive Committee of the Council for its consideration and I shall communicate with you again at a later date.'

On 21 December 1954 the Registrar wrote as follows:

'I placed your letter of the 10th ultimo in regard to medical

practitioners availing themselves of services of untrained midwives in areas where trained midwives are available, before the Executive Committee of the Council at its last meeting.

'The Executive Committee has resolved to refer the whole matter to the South African Nursing Council for their comments. This is now being done and I shall communicate with you again at a later date.'

On 25 April 1955 the Acting Registrar wrote as follows:

'Further to my letter of 21 December 1954, which was in reply to your letter of 10 November 1954, which had reference to a medical practitioner availing himself of the services of an untrained midwife in an area where a trained midwife was available, I have to advise that the Executive Committee gave further consideration to the matter at its most recent meeting; it also received advice in the matter from the South African Nursing Council.

'I have now been directed to advise you that the Committee desires to draw attention to the following ruling given by the Council some time ago, which related more particularly to auxiliary personnel for which the Council maintains registers:

"That the Council had endeavoured for years to establish a compulsory register for all classes of persons who were concerned with the treatment of the public, and until such legislation was introduced, it was impossible for the Council to compel medical men to make use of the services of registered auxiliary personnel only, though in the opinion of the Council it was most desirable. Until such further enabling legislation was introduced, the Council was incapable of giving to the profession any other ruling in regard to the matter as it had already done to the best of its ability.

"The Committee further resolved that it be pointed out that when a medical practitioner referred a patient to an auxiliary, he assumed a certain responsibility while the patient remained his patient."

'In the opinion of the Executive Committee, the above ruling applies equally to midwives, even though midwives are not auxiliaries registrable with this Council.

'I shall be pleased to be of further assistance to you at any time in the future.'

1. *S. Afr. Med. J.* (1954): **28**, 874.

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# South African Medical Journal

## Suid-Afrikaanse Tydskrif vir Geneeskunde

### VAN DIE REDAKSIE

#### HARTVERLAMMING

L. N. Katz<sup>1</sup> het onlangs 'n lesing aan die Kollege van Geneeshere van Philadelphia gegee wat gegaan het oor die meganisme van hartverlamming op grondslag van die opvattinge van sy 'skool' wat die probleem vir amper 25 jaar al bestudeer het. Hy versmaai 'the recent trend of semantics in which the terms congestive failure, low-output failure, and high-output failure have come into vogue'. Hy is van mening dat hierdie uitdrukkings tot 'n mate van misverstand gelei het; 'low-output failure' mag aan baie faktore te wyte wees en die hart hoef in die eerste instansie nie noodwendig daarmee betrokke te wees nie, en, 'high-output failure' is 'n verkeerde benaming. Hy beskou 'congestive failure' ook as 'n verkeerde benaming aangesien kongestie kan plaasvind of die hartbloedsomloop afneem of nie en dit kan ook voorkom in ongesteldhede van die bloedvatstelsel wanneer daar met die hart niks verkeerd is nie.

Hy versuim ook nie om die losse gedagtegang i.v.m. die begrip van sogenoemde regter- en linkerhartverlamming te korreger nie. In dinamiese ewewig pomp die regter- en linkerhartkamers dieselfde hoeveelheid bloed; slegs wanneer 'n pasiënt se bloedsomloop begin verswak, of hy van die verswakking herstel, of as hy sterwend is, is daar wat 'n geringe volume betref enige onewewigtigheid hoegenaamd, maar daar is geen ongelukheid in die hoeveelheid wat die twee kante van die hart uitstoot nie. Ondoeltreffendheid volg wanneer die hart onbekwaam is om sy werk te doen. Somtyds lei dit tot die staking van die hartbloedsomloop (afgesien van ekstrahartbloedsomloopstaking) en somtyds tot kongestie.

Inspanning van die hart mag die gevolg wees van 'n toename in die bloed wat deur die are terugvloei, 'n toename in die groot- of longslagaarbloeddruk, of van sekere ander laste wat nie so maklik verklaar kan word nie. Die meganismes wat betrokke is by die oorkoming van die verhoogde lading is (a) die eenvoudige meganisme van uitsetting; (b) die toename in die spiermassa, deur hipertrofie, wat tyd neem; (c) hartversnelling, as gevolg van verminderde cholinergiese en verhoogde adrenergiese invloed; (d) verhoogde saamtrekkingskrag van die hartspiere wat deur hormoon- en refleksmeganismes teweeggebring word.

Hierdie is die 4 kompensasiemeganismes waarmee

### EDITORIAL

#### CARDIAC FAILURE

In a recent lecture to the College of Physicians of Philadelphia the mechanism of cardiac failure was presented by L. N. Katz<sup>1</sup> based on the concepts of his 'school' which has been studying the problem for nearly 25 years. He scorns 'the recent trend of semantics in which the terms congestive failure, low-output failure, and high-output failure have come into vogue'. He feels these terms have led to some confusion; low-output failure may be due to many factors and need not be primarily cardiac, while high-output failure is a misnomer. He regards congestive failure also as a misnomer, as congestion may occur whether there is cardiac circulatory failure or not, and it may also occur in disorders of the vascular system when the heart is competent.

He does not omit to correct the loose thinking associated with the concept of so-called right and left heart failure. In dynamic equilibrium the right and left ventricles pump out equal quantities of blood; only when a patient is going into circulatory failure or recovering from it, or is moribund, is there any disequilibrium as far as minute volume is concerned, but there is no disparity in output of the two sides of the heart. Heart failure arises from incompetency of the heart. Sometimes this leads to cardiac circulatory failure (as distinct from extracardiac circulatory failure); and sometimes this leads to congestion.

Stress upon the heart may be due to an increase in the venous return, to an increase in the systemic or pulmonary arterial blood pressure, or to certain other loads not so easily demonstrated. The mechanisms that are involved for overcoming the increased load are (a) the simple mechanism of dilatation; (b) increase of the mass of muscle, by hypertrophy, which takes time; (c) tachycardia, through reduced cholinergic and increased adrenergic influence; (d) an increase in the contractile power of the myocardium brought about by hormonal and reflexogenic mechanisms.

These are the four compensatory mechanisms by

die hart sy spannings oorkom en wanneer hul almal saam in werking is, is hul onderling afhanklik. Op grond van hierdie opvatting is dit ook moontlik om hartreserwe in terme van uitsetting, oorvergrooting, hartsnelheid en saamtrekking te definieer, alhoewel dit nie altyd moontlik is om hierdie 4 hartreserwemaatreëls duidelik te definieer nie. Daar is egter iets te sê vir die begrip dat daar 'n perk vir elkeen van hierdie maatreëls is waarbo verdere toename nie moontlik is nie, of indien moontlik, nadelig. Die aanpassings, wat vir 'n stygende lading op die hart vergoed, is beperk. 'n Stadium word bereik wanneer die meganismes onvoldoende is en 'n nuwe reeks gebeurtenisse vloei voort wat ingewikkeld is; baie dele van die bloedsomloop raak betrokke in 'n wisselwerking tussen menige vloeistof- en neurogeniese beheermeganismes.

'n Ander aspek van hartverlamming wat deur Katz behandel is, is die meganisme van hartedeem. Sy gevolgtrekkings oor die kwessie van edeemvorming in kongestie is dat dit nie stuwung in enige besonderde deel van die liggaam is of buislose klierstowwe wat die abnormale natriumchloried- en vloeistofwerking van die nier veroorsaak nie maar stuwung *per se*. Die aardrukverhoging bewerkstellig op een of ander manier 'n meganisme wat die nier natriumchloried en water laat terughou. Edeem by hartverswakking word deur die hart veroorsaak maar ongesteldheid van nier-(buis)werking is die gevolg van 'n *receptor-effector*-meganisme. Faal die hart dan reageer die liggaam asof natrium ontbreek terwyl dit in werklikheid met natriumchloried en water oorlaai is. Die mening is dat dit die herabsorpsie van hierdie stowwe is wat geraak word, maar Katz gee aan die hand dat daar inmenging is met die werklike afskeiding van natriumchloried of water uit die bloed uit na die nierbuis.

1. Katz, L. N. (1954): Trans. Coll. Phys. Philad., 22, 53.

which the heart meets its stresses, and when all operate together they are interdependent. From these concepts too it is possible to define cardiac reserve in terms of dilatation, hypertrophy, heart rate, and contractile power, although it is not always possible to define these four measures of cardiac reserve clearly. There is, however, merit in the concept of an upper limit for each of these measures beyond which further increase is impossible or, if possible, becomes detrimental. The adjustments which compensate for an increasing load on the heart are limited. A point is reached where the mechanisms become inadequate and a new series of events ensue which are complex; many parts of the circulation become involved with an interplay of many humoral and neurogenic regulatory mechanisms.

Another aspect of heart failure considered by Katz is the mechanism of cardiac oedema. His conclusions on the question of oedema formation in congestion is that it is not stasis in any special part of the body or endocrine substances which cause sodium-chloride and water dysfunction of the kidney but stasis *per se*. Rise in venous pressure somehow sets up a mechanism that causes the kidney to retain sodium chloride and water. Oedema in heart failure is caused by the heart, but derangement of kidney (tubule) function is produced through a receptor-effector mechanism. In heart failure the body reacts as though it were depleted of sodium whereas actually it is overloaded with sodium chloride and water. It is believed that it is re-absorption of these substances that is affected, but Katz suggests there may be interference with actual secretion of sodium chloride or water out of the blood into the tubules.

1. Katz, L. N. (1954): Trans. Coll. Phys. Philad., 22, 53.

## CHEMISTRY OF MIND

The physiological background of thinking and feeling has long been a problem and a challenge to research workers. With recent advances in biochemical knowledge some progress in being made in this difficult field. In 1954 Woolley and Shaw<sup>1</sup> described the properties of a substance called serotonin (5-hydroxytryptamine) which is normally present in mammalian sera. Its main actions are twofold—it is a vasoconstrictor by virtue of its effect on smooth muscle and it also appears to be of importance in neural function. Large amounts of serotonin are found in brain, peripheral nerve and visceral ganglia. In an attempt to discover its precise function in cerebral metabolism attention was directed to a group of substances which are so closely related chemically to serotonin that they block its action on the brain. Some of these substances such as the ergot alkaloids, harmine etc. have been known for centuries to produce a transient abnormal mental state characterized by visual hallucinations, change in affect, feelings of unreality etc. in a setting of clear consciousness. Woolley and Shaw suggested that a deficiency of serotonin might be the cause of the spontaneously

occurring psychosis, schizophrenia, because the 'experimental psychoses' resemble it so closely.

Another group of workers (Hoffer, Osmond and Smythies)<sup>2</sup> were also interested in the experimental psychoses. Their starting point was that mescaline, which is well known for the extraordinary mental abnormalities it produces, has a chemical structure similar to adrenaline. If they could find a 'midway' substance with the physiological effects of adrenaline and the psychological effects of mescaline they might find the answer to schizophrenia. They systematically tested substances chemically similar to mescaline and found a small number that caused psychological disturbances. They were all plant alkaloids—ibogaine (from an African bean), lysergic acid (from rye rust), hashish (from Indian hemp) and a fungus *Amanita pantherina*. Then by chance they found that a degradation product of adrenaline—called adrenochrome because of its pink colour—had a similar chemical structure to these plant alkaloids, could produce identical psychological disturbances, and could occur in the human body. They tentatively suggested that adrenochrome might be

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the answer to schizophrenia, and by injecting themselves intravenously with adrenochrome they produced transient abnormalities of thinking and feeling which they claim are indistinguishable from those observed in schizophrenia.

One of the mescaline-related plant alkaloids—lysergic acid—is already being used therapeutically by some psychiatrists (Sandison<sup>3</sup>). They say that it can be of great use in neurotic patients because minute doses by mouth produce a transient psychosis in which the patients' unconscious fantasies and memories 'erupt' into consciousness, providing valuable information for analysis.

It may be that adrenochrome and the plant alkaloids of the mescaline group all work by acting as antagonists to serotonin, but whether there is this link between serotonin and adrenochrome has not been established. What does emerge from these interesting and stimulating experiments is the fundamental importance to progress in psychiatry of basic medical research.

1. Woolley, D. W. and Shaw, E. (1954): *Brit. Med. J.*, **2**, 122.
2. Hoffer, A., Osmond, H. and Smythies, J. (1954): *J. Ment. Sci.*, **100**, 29.
3. Sandison, R. A. (1954): *Ibid.*, **100**, 508.

## AN ANALYSIS OF 519 CASES OF DIPHTHERIA IN JOHANNESBURG 1951-1952

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It has recently been shown that diphtheria in South Africa is still a serious and widespread disease, responsible for 200-400 deaths annually.<sup>1</sup> It was therefore considered worth while surveying the clinical aspects of the disease, particularly with reference to the therapy.

The survey was carried out on 519 consecutive European patients admitted to a Johannesburg hospital during the 2 years 1951-52 and treated as diphtheria. A clinical analysis of the cases is presented in Table I.

TABLE I. CLINICAL FEATURES OF 519 EUROPEAN CASES OF DIPHTHERIA

	No. of Patients	%
Complications:		
Bullneck .. .. .	93	18
Tracheotomy .. .. .	27	5
Toxaemia .. .. .	26	5
Myocarditis .. .. .	94	18
Palatal Paralysis .. .. .	36	7
Other Neurological Complications .. .. .	30	6
Nephritis .. .. .	26	5
Total with Complications .. .. .	173	33.5
Recoveries:		
Complete .. .. .	456	88
Discharged with Residual Defect .. .. .	23	4
Deaths .. .. .	40	7.7

Bullneck and myocarditis were the commonest complications in this series (each accounting for 18%), whilst the remainder each occurred in 5-7% of the cases. Tracheotomy is included as a complication although it is a form of therapy of a mechanical obstruction. The complication rate for the total material was 33.5%, which is rather low.<sup>3, 17, 18</sup> This might be due to early treatment, to a high proportion of immunized patients, or to a predominance of the *mitis* strain of *Corynebacterium diphtheriae*. There is hardly any reason to assume that patients are admitted to hospital earlier in Johannesburg than elsewhere. The proportion

of immunized to non-immunized was the same as in England<sup>2</sup> and Copenhagen.<sup>3</sup> Murray<sup>4</sup> showed in 1942 that the *mitis* type was responsible for 85% of the cases in Johannesburg, and since no change has been found on later periodical surveys,<sup>5</sup> it can be assumed that the low complication rate is due to the *mitis* infection.

The cases that recovered completely amounted to 88%; 4% were discharged with residual defects, such as abnormal heart function (ECG), persistent palatal paralysis or peripheral neuritis, all of which are complications with a good prognosis if they occur late in the disease.<sup>6, 3</sup>

The case mortality was 7.7%, which is the highest reported in Johannesburg in the last decade.<sup>1</sup> This suggests, if the distribution of bacterial types has remained unchanged, that antibiotics, especially penicillin and sulpha drugs, which have been used extensively, are without influence in preventing death.

From these figures it is obvious that diphtheria in South Africa should not be considered as a disease of the past, but as a problem of current interest. On the other hand it is well known that a number of factors may influence or moderate the outcome of the disease. These will be analysed in this article and an attempt will be made to evaluate each one.

The age distribution of the 519 patients was similar to that found in a previous survey,<sup>1</sup> 50% being under 7 years and 75% under 12. The patients who had been actively immunized prior to admission were about 2 years older than the non-immunized, e.g. 50% of the immunized were under 7-8 years, whilst 50% of the non-immunized were under 6.

### DIAGNOSIS

As early treatment of diphtheria is decisive in obtaining favourable results, it must once again be emphasized that the primary diagnosis in this disease is entirely clinical. If there are adequate clinical reasons for taking a swab for *C. diphtheriae* (KLB) the immediate use of

serum therapy is imperative. The only exception is the tracing of carriers.

Some information on the date of diagnosis can be extracted from Table II, where the cases are tabulated according to duration of obvious illness before admission

TABLE II. DURATION OF ILLNESS PRIOR TO ADMISSION

Duration of Illness before Admission (Days)	No. of Patients	Cumulative No. of Patients	Cumulative Frequency %
0-1..	32	32	6.2
2 ..	100	132	25.6
3 ..	100	232	44.8
4 ..	87	319	61.5
5 ..	54	373	72.0
6 ..	43	416	80.2
7 ..	31	447	86.2
8-10 ..	36	483	93.0
>10..	36	519	

to hospital. About 60% of the patients were admitted before the 5th day of illness, but 14% had been ill for a week before treatment.

In some cases a definitive diagnosis is extremely difficult, if not even impossible, in spite of careful clinical observation and extensive laboratory investigation. Clinical diphtheria cannot be excluded merely because KLB was not isolated. On the other hand, demonstration of KLB does not necessarily mean that the patient is suffering from the disease. He may be a carrier, or even a carrier with glandular fever, streptococcal tonsillitis or simple tonsillitis. Repeated antitoxin titration of the patient's blood might assist in some cases, but is seldom a practical procedure.

#### DEMONSTRATION OF *C. DIPHTHERIAE*

Table III illustrates the chances of demonstrating KLB at various times during the course of the disease provided the patient has not been treated with antibiotics. KLB

TABLE III. DEMONSTRATION OF *C. diphtheriae* IN RELATION TO DURATION OF ILLNESS BEFORE TREATMENT

Duration of Illness before Admission (Days)	No. of Patients	Bacteriologically Positive	% Positive
1 ..	32	22	69
2 ..	100	74	74
3 ..	100	65	65
4 ..	87	64	74
5 ..	54	43	80
6 ..	43	32	74
7 ..	31	25	81
8-10 ..	36	28	78
>10..	36	29	81

was found in nearly 75% of the patients (Copenhagen 1943-44: 85% bacteriological positive findings<sup>3</sup>). The stage of the disease does not affect the frequency with which KLB is isolated.

Although not statistically significant (perhaps because of the small numbers) the figures give the impression that KLB was isolated with increasing frequency up to the age of about 11 years, and less frequently thereafter

TABLE IV. DEMONSTRATION OF *C. diphtheriae* IN DIFFERENT AGE GROUPS

Age (Years)	No. of Patients	Bacteriologically Positive	% Positive
0-2..	46	29	63
2-4..	94	68	72
4-6..	96	72	74
6-8..	88	66	75
8-10 ..	53	48	90
10-12 ..	31	28	90
12-14 ..	29	19	65
14 ..	82	52	63

(Table IV). In the young the smaller pharynx and a lack of cooperation might militate against obtaining a satisfactory specimen from the throat. It is more difficult to offer a satisfactory explanation for the older age groups.

The difference between the frequency with which KLB was isolated from the throat of immunized and non-immunized patients was not significant (Table V), an understandable finding because, as immunity against diphtheria is antitoxic and not antibacterial in nature, such an immunity will not prevent KLB from existing on the mucosa. If the host's immunity is poor or the

TABLE V. DEMONSTRATION OF *C. diphtheriae* RELATED TO PREVIOUS IMMUNIZATION

	No. of Patients	Bacteriologically Positive	Bacteriologically Negative	% Positive
Previously Immunized ..	168	128	40	76.2
Not Immunized ..	351	254	97	72.3
Total ..	519	382	137	73.7

resistance for other reasons diminished (secondary epidemiological factors, Anderson<sup>31</sup>) an attack of clinical diphtheria may occur, but if the host is well immunized KLB may live as a saprophyte for a period of time, thus rendering him a carrier. Immunity in diphtheria, as in many other diseases, prevents the effect but does not destroy the responsible agent itself.<sup>7,8</sup> It will not be possible to discontinue prophylactic measures in the future.

It has already been mentioned that the demonstration of KLB does not conclusively clinch the diagnosis of diphtheria. The question arises whether the 137 patients who were bacteriologically negative (Table V) had clinical diphtheria. In Table VI the cases are divided according to the demonstration of *C. diphtheriae*, and

TABLE VI. BACTERIOLOGICAL FINDINGS IN IMMUNIZED AND NON-IMMUNIZED CASES OF CLINICAL DIPHTHERIA

		No. of Patients	No. with Complications	%	No. of Deaths	%
CD +	382	I 128 NI 254	31 98	24.2 38.6	3 21	2.3 8.3
CD -	137	I 40 NI 97	10 34	25.0 35.1	2 14	5.0 14.5

CD + = *C. diphtheriae* was isolated  
 CD - = *C. diphtheriae* was not isolated  
 I = Immunized  
 NI = Not immunized

Comparing the complication rates in:

- (i) CD+, (I) and CD-, (I):  $t=0.10$   $P=0.9$   
 (ii) CD+, (NI) and CD-, (NI):  $t=0.61$   $P=0.3$

each group subdivided into non-immunized and immunized. As a standard immunization one accepted 2 injections of toxoid at an interval of 4-8 weeks, provided the last injection was not later than 1 month before the illness.

If there were about the same degree of clinical diphtheria in the bacteriological negative group as in the bacteriological positive group we could expect to find the same complication rate in comparable subgroups. Statistical analysis shows that there is no significant difference in the complication rates of the immunized groups (Table VI; CD+, (I) and CD-, (I);  $P=0.9$ ) or of the non-immunized groups (CD+, (NI) and CD-, (NI);  $P=0.3$ ) whether KLB was isolated or not. It may therefore be concluded that diagnosis on clinical grounds was accurate and that the isolation of KLB although of great value is not a *sine qua non* in establishing diagnosis.

All the positive bacteriological reports were based on cultural and morphological observations. Of the cultures reported positive, 96 were tested for toxigenicity by guinea-pig inoculation. The results are tabulated in Table VII.

A statistical analysis revealed that there was no significant difference in complication rates between the groups in which KLB was toxigenic and that in which the bacteriological diagnosis was established on morphological and cultural findings only, nor was there any difference in the incidence of complication rates between the non-immunized of the toxigenic group and the

tested. Although these figures are too small for statistical analysis, it may be noted that complications also occurred in this group. The conclusion is that a correct clinical diagnosis was not dependent on the isolation of toxigenic *C. diphtheriae*.

#### THE SIGNIFICANCE OF DURATION OF ILLNESS PRIOR TO ADMISSION TO THE FINAL OUTCOME

Table II shows the duration of illness before hospitalization. From data available in this study it is apparent that the distribution of the patients, whether immunized or not, in the various age groups (2-year periods) is homogeneous and therefore need not be further considered.

The duration of illness before admission, which in 90% of the cases is synonymous with the initiation of treatment, is in Table VIII correlated with complication rates and death rates. These rates vary from day to day but if the figures are smoothed by using a moving average of 3 groups we get a clearer picture. The results are expressed graphically in Fig. 1.

The moving averages indicate the importance of an

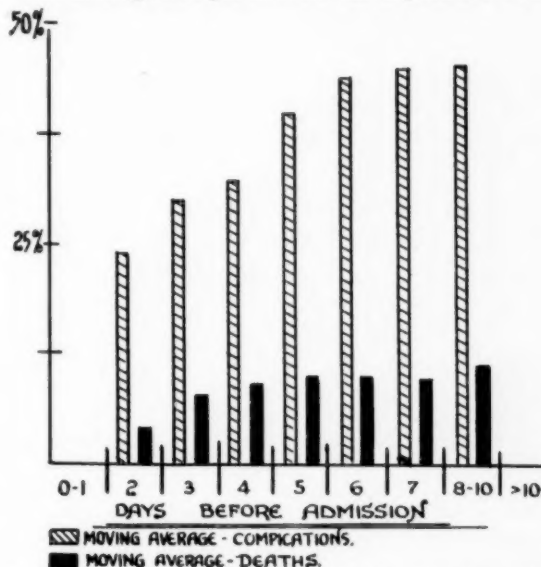


Fig. 1. Duration of illness before admission related to clinical course of diphtheria.

TABLE VII. THE TOXIGENICITY OF *C. diphtheriae* RELATED TO THE CLINICAL COURSE (382 CASES)

		No. of Patients	No. with Complications	%
CD +	I	27	8	30
Toxigenic	NI	56	22	39
CD +	I	6	1	17
Non-Toxigenic	NI	7	2	29
CD +	I	95	22	23
Not Tested	NI	191	74	39

Abbreviations: See Table VI

Comparing the complication rates in:

(i) CD + (Tox., I) and CD + (Not tested, I):  $t = 0.66$ ,  $P = 0.3$

(ii) CD + (Tox., NI) and CD - (NI) (see Table VI):  $t = 0.53$ ,  $P = 0.3$

group with negative bacteriological findings ( $P=0.3$ ). KLB was found non-toxigenic in 13 (14%) of the cases

TABLE VIII. DURATION OF ILLNESS BEFORE ADMISSION RELATED TO CLINICAL COURSE OF DIPHTHERIA

Duration of Illness before Admission (Days)	No. of Patients	No. with Complications	%	Moving Average of 3 Groups %	No. of Deaths	%	Moving Average of 3 Groups %
0-1	32	4	13	—	—	—	—
2	100	28	28	24.1	4	4	4.3
3	100	24	24	29.3	6	6	7.0
4	87	32	37	31.5	10	11	8.7
5	54	20	37	39.1	5	9	10.3
6	43	20	47	43.0	4	9	10.2
7	31	15	48	43.6	4	13	10.0
8-10	36	13	36	43.7	3	8	10.7
>10	36	17	47	—	4	11	—

TABLE IX. SITUATION OF DIPHThERITIC FOCI RELATED TO CLINICAL COURSE

No. of Patients	Single Focus				Two or More Foci						No Tonsillar Ex. or Nasal or Laryng. Symptoms	Total
	Tonsil Memb. Ex.	Tonsil Follic. Ex.	Nasal	Laryngeal	Tonsil Memb. Ex. + Nasal	Tonsil Memb. Ex. + Laryng.	Tonsil Memb. Ex. + Nasal + Laryng.	Tonsil Follic. Ex. + Nasal	Tonsil Follic. Ex. + Laryng.	Nasal + Laryng.		
No. of Patients	258	111	16	4	41	36	4	5	5	1	38	519
Complications:												
Bullneck	66	—	1	1	14	7	2	—	—	—	2	93
Tracheotomy	—	—	—	1	—	20	—	—	2	1	—	27
Toxaemia	11	—	—	—	6	7	—	—	—	—	—	26
Myocarditis	47	12	1	1	12	15	—	—	—	—	4	94
Palatal Paralysis	24	—	—	—	4	2	—	—	—	—	6	36
Other Neurological Complications	17	—	1	1	4	3	—	—	—	—	4	30
Nephritis	15	2	—	—	3	3	1	—	1	—	1	26
No. with Complications	91	14	1	1	22	30	4	—	2	1	7	173
%	35	13	6	25	54	83	100	—	40	—	19	33.5
Complete Recoveries	229	107	16	3	32	24	1	5	4	—	35	456
Discharged with Residual Defect	15	2	—	1	2	1	—	—	—	—	2	23
No. of Deaths	14	2	—	—	7	11	3	—	1	1	1	40
%	5.4	1.8	—	—	17	30	75	—	20	—	3	7.7

Ex. = exudate, membr. = membranous, follic. = follicular, laryng. = laryngeal.

early diagnosis because the chance of complications arising and death ensuing increase *pari passu* with delay in treatment, subject to the reservation that treatment plays little or no part if the delay has extended to 5 days or more. This observation is supported by Amies' experiments in guinea-pigs.<sup>9</sup> He found that the time of the injection of antitoxin into intoxicated or infected animals was of much greater importance than the amount injected. Paschla's observations<sup>10</sup> in Berlin support this contention. He found that the death rate among 197 diphtheria patients who were treated within the first 48 hours of correct diagnosis was 1.96%, whereas it was 8.9% among general diphtheria patients in Berlin.

The effect of antitoxin therapy on patients with diphtheria has been a subject for controversy ever since Behring's time. Although clinicians do not doubt the favourable influence of antitoxin, really convincing positive evidence has proved difficult to come by. Amies' and Paschla's observations on the absolute necessity for early antitoxin treatment is further supported by this survey, which suggests that its beneficial effect in man is limited to the first 4-5 days of illness and that at present nothing can be expected from specific treatment at any later date.

#### THE DIPHThERIA FOCUS OR FOCI

A summary of the clinical course related to the localization of the diphtheria focus or foci is presented in Table IX (a differentiation between tonsillar and pharyngeal cases as recommended by Top<sup>11</sup> was not feasible in this series). The tonsils were affected in 90%

Comparison of complication rates in selected groups:

- Tonsil membr. ex.—Tonsil follic. ex.  
 $\chi^2 = 18.43$   $P < 0.01$
- Tonsil membr. ex.—Tonsil membr. ex. + nasal  
 $\chi^2 = 5.60$   $P = 0.02$
- Tonsil membr. ex.—Tonsil membr. ex. + laryng.  
 $\chi^2 = 29.33$   $P < 0.01$
- Tonsil membr. ex. + nasal—Tonsil membr. ex. + laryng.  
 $\chi^2 = 8.45$   $P < 0.01$

Comparison of death rates in the same groups:

- $\chi^2 = 2.74$   $P = 0.01$
- $\chi^2 = 6.71$   $P = 0.01$
- $\chi^2 = 26.44$   $P < 0.01$
- $\chi^2 = 2.63$   $P = 0.1$

and they constituted the only focus in 71% of the cases. The membranous form was by far the most frequent (2/3rds of all cases).

*Single focus.* The diphtheritic foci met in this study were of 3 types: (a) Tonsillar, where the exudate was either of the membranous type or the follicular type, (b) nasal, and (c) laryngeal. There was one case of diphtheria of the skin as a complication to a tonsillar-membranous type. Table IX shows that toxaemia and palatal paralysis were restricted to the tonsillar-membranous form, which also included most of the cases of myocarditis, 'other neurological complications' and nephritis.

On statistical examination of the tonsillar-membranous type, against the tonsillar-follicular type there was found a significantly higher complication rate ( $P < 0.01$ ) in the former as compared with the latter group, whereas there was no significant difference in death rates. No importance can be attached to the death-rate comparison

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as there were only 2 deaths in the tonsillar-follicular type.

The 2 other groups are too small for statistical calculation. However, they cannot be neglected; in them complications such as myocarditis, tracheotomy and peripheral neuritis occurred. It can be concluded that the type of tonsillar exudate has a bearing on the prognosis, being more serious when membranes are present. Laryngeal diphtheria is serious, whereas nasal diphtheria has a good prognosis. Similar observations were made by Hartley *et al.*<sup>2</sup>

Two or more foci. Again the majority of complications are found in the tonsillar-membranous type. For example all toxæmia, myocarditis and neurological complications occurred in this group. But the presence of a second focus increases the complication rate and death rate considerably. There is a statistically significant difference between complication rate and death rate of the isolated tonsillar-membranous type on the one hand and the same form combined with either nasal or laryngeal diphtheria. The prognosis for the tonsillar-follicular form is good if the second focus is in the nose, but more serious if it is in the larynx. The combination of nasal and laryngeal diphtheria seems to be a rarity. The larynx was affected in 10% of the patients, in half of whom tracheotomy was carried out. Chigier<sup>12</sup> found a tracheotomy rate of 3% in non-European cases from South Africa; the rate was 1% on Tyneside 1941-43<sup>2</sup> and nil at Coseley 1951.<sup>13</sup>

Finally there were 38 patients without exudates on the tonsils and without nasal or laryngeal symptoms. Nevertheless it is evident from Table IX that these were cases of clinical diphtheria. The complication rate in this group was greater than in those with tonsillar-follicular exudate as a single focus. It is interesting to observe that in 7 patients a relatively small number of early complications (a comparatively large number of late complications (myocarditis, neurological complications) occurred. This suggests *a priori* that these patients had been neglected in the acute phase. This was confirmed in that none of them was admitted to hospital before the 6th day of illness; 3 were admitted after the 15th day, 1 of whom died, and her history is as follows:

Female, 4 years old. Not immunized; several attacks of sore throat during 5-6 weeks immediately preceding admission; developed weakness in the legs 10 days, nasal speech 7 days, and difficulty in swallowing 4 days before admission. No specific treatment had been given. Died from myocarditis a week after admission.

A diagnosis of diphtheria was made in 31 patients who presented no localized symptoms or complications. *C. diphtheriae* was isolated from 27 of them and this was obviously the reason for the diagnosis and treatment. It remains doubtful, however, whether they were in fact suffering from diphtheria or whether they were diphtheria carriers with some other disease which, in most cases, was a sore throat. It should be mentioned that the 31 uncomplicated cases showed the same distribution with regard to day of admission, as illustrated in the rest of material (Table II).

To sum up: Tonsillitis complicated with membranous exudate was the most frequent lesion and in people so affected toxic complications were most frequently

encountered. Laryngeal diphtheria, although rarely occurring alone, always gave cause for anxiety because of the associated respiratory obstruction, whereas nasal diphtheria or tonsillitis with follicular exudate allowed of a much more favourable prognosis.

#### COMPLICATION AND DEATHS RELATED TO AGE

It is of interest to analyse the material with reference to age because in South Africa the primary immunization course is commonly given late,<sup>14</sup> presumably at school. Table X illustrates the percentage of complications

TABLE X. COMPLICATIONS AND DEATHS WHICH OCCURRED BEFORE SCHOOL-GOING AGE (IMMUNIZED AND NON-IMMUNIZED)

	Total Cases	Cases under 6-Years Old	%
Bullneck .. .. .	93	48	52
Tracheotomy .. .. .	27	25	93
Toxaemia .. .. .	26	18	69
Myocarditis .. .. .	94	53	56
Palatal Paralysis .. .. .	36	18	50
Other Neurological Complications .. .. .	30	17	57
Nephritis .. .. .	26	15	58
Deaths .. .. .	40	30	75

and deaths which occurred before 6 years of age. Most of the complications, practically all the tracheotomies, and 75% of the deaths occurred below the age of 6 years. Because of this the primary course of immunization should be given at an age much earlier than 6 years

TABLE XI. COMPLICATIONS AND DEATHS RELATED TO AGE

	Patients under 6 Years	Patients over 6 Years
Myocarditis only .. .. .	33 (8)	35 (5)
Myocarditis + Toxaemia .. .. .	11 (10)	5 (3)
Myocarditis + Tracheotomy .. .. .	7 (1)	1 (0)
Myocarditis + Tox. + Trach. .. .. .	2 (2)	—
Toxaemia .. .. .	1 (1)	3 (1)
Tracheotomy .. .. .	12 (5)	1 (1)
Toxaemia + Tracheotomy .. .. .	4 (3)	—
Total .. .. .	70 (30=43%)	45 (10=22%)

Figures in brackets = number of deaths in the group

(cf. Woodrow, Cape Town, 1946<sup>15</sup>). All deaths occurred in association with myocarditis, toxæmia or tracheotomy. The total number of each of these complications, their combinations and the number of fatal cases in each group is tabulated in Table XI in regard to age.

It will be observed that, while the prognosis for each of the complications is more serious in the younger age-groups, toxæmia is the most dangerous and that tracheotomy cases, as observed by Chigier<sup>12</sup> and Bayer,<sup>16</sup> carry a 50% mortality. Myocarditis occurred rather frequently in the older age-groups.<sup>3</sup> The total figures show that there is, for the same group of complications, a mortality of 43% in patients below 6 years old as against 22% in those above this age. However, conclusions should not be drawn from these last figures without some knowledge of the state of active immunity of the patients in the age-groups.

## ACTIVELY IMMUNIZED AND NON-IMMUNIZED

The effect of immunization is shown by the data in Table XII.

TABLE XII. COMPLICATIONS AND DEATHS IN IMMUNIZED AND NON-IMMUNIZED PATIENTS

TOTAL OF ALL CASES					
	No. of Patients	No. with Complications	%	No. of Deaths	%
Immunized ..	168	41	24.4	5	3.0
Non-Immunized ..	351	132	37.6	35	10.0

(i) Complications of I and NI:  $t = 3.14$ ,  $P = 0.001$

(ii) Death rates of I and NI:  $\chi^2 = 7.72$ ,  $P < 0.01$

There was a history of immunization in 32.5% of the patients, which is higher than the figures from Cape Town<sup>15</sup> but similar to those from Gateshead 1944<sup>2</sup> and Copenhagen 1943-44.<sup>3</sup> It does not mean that the immunization of the individual has been unsuccessful, but that the percentage of the population actively immunized was insufficient. Without knowing this percentage we can form no opinion of the effect of prophylactic endeavours on the morbidity. The effect on individual cases, however, is significant for both complication rate ( $P=0.001$ ) and death rate ( $P<0.01$ ), which accords with the observations of others<sup>3, 7, 17, 18</sup> that the prophylactic injections moderate the clinical course of diphtheria. As it is most unusual for diphtheria to terminate fatally in immunized patients<sup>2, 3</sup> the 5 cases found in this series will be shortly described.

**Case 1.** Female, 4 years old. Immunized when 6 months old (2 injections of combined whooping cough and diphtheria prophylactic). Ill with sore throat 3 days before admission, vomiting and convulsions the day before. On admission moderately ill with extensive white membranes obscuring both tonsils. Moderate bulleck. In spite of therapy developed a palatal paralysis and peripheral neuritis and about a week later myocarditis with fatal termination. *C. diphtheriae* was isolated before admission.

**Case 2.** Male, 3 years old. Immunized with 2 injections a few months before illness. Had been ill with sore throat for 5 days. Diagnosed as follicular tonsillitis. Became suddenly worse the day of admission and received artificial respiration on the way to hospital. On admission moribund with signs of laryngeal obstruction. Died 5 minutes later. Pharynx was filled with membranous material. *C. diphtheriae* was isolated after death.

**Case 3.** Male, 5 years old. Immunized when 4 years old (number of injections not stated). Two weeks before admission, an attack of croup, treated as a non-specific laryngitis. Four days before admission developed a sore throat increasing in severity, followed by respiratory difficulty 3 days later. The patient was extremely ill on admission and had cervical adenopathy; there was no membrane in the throat, but severe laryngeal obstruction. Tracheotomy was performed immediately, but the patient died 24 hours later with symptoms of heart failure.

**Case 4.** Male, 5 years old. Immunized when 2 years old (number of injections not stated). Four days before admission, sore throat, pyrexia and headache. The day before admission, hoarseness, slight convulsions and respiratory difficulty. On admission, toxic, mild respiratory distress, enlarged cervical glands with slight periglandular oedema, and enlarged tonsils covered with membranes. The condition improved for the first few days. A week later, myocardial affection and peripheral vascular failure with fatal termination in a few hours. Toxigenic *C. diphtheriae* was isolated from the throat.

**Case 5.** Female, 11 months old. Immunized 2 months before illness (number of injections not stated). Four days before admis-

sion, a slight cold. Respiratory difficulty 12 hours before admission. First medical attention a few hours before hospitalization. Patient seriously ill, cyanotic, pronounced croup. Membranes on tonsils. Tracheotomy performed immediately with good results, but the toxæmia progressed and the patient died 3 days later with signs of pulmonary affection. *C. diphtheriae* was not isolated.

There can be no doubt that the first 2 patients had received a full primary course of diphtheria immunization, and yet they developed malignant diphtheria. An earlier diagnosis should have been possible in both cases, especially in case 1, and might have resulted in a favourable outcome. It is not known if the last 3 patients had been fully immunized but, even so, cases 3 and 4 could have been diagnosed at an earlier date. As previously stated diagnosis can be very difficult, but it is clear from these examples that diphtheria should always be borne in mind even when patients are known to have been immunized. Further, a small number of patients are relatively refractory to immunization and thus may contract a malignant diphtheria equivalent to that in a non-immunized person. Finally, diphtheria prophylactic is not always stored under optimal conditions.

In spite of the 5 deaths, of whom 2 certainly were immunized and 3 probably, it must be concluded that individual immunization is generally successful.

## Treatment

Antitoxin and penicillin were used as standard treatment. The results in Table VIII and the diagram can probably be attributed to the effect of antitoxin treatment, whereas penicillin seems to be without influence on the actual disease. Other antibiotics such as streptomycin, aureomycin, terramycin, and the sulphonamide drugs were given to a small number of patients, too small to allow of conclusions. Cortisone or ACTH was given to those who were very ill, but the true effect cannot be gauged, partly because of the case selection employed and partly because of the small number. Similarly, the general effect of glucose and oxygen cannot be appraised because they were given only to selected patients.

## Financial Aspects

From previously published figures from Johannesburg<sup>1</sup> it was found that 164 Europeans with diphtheria spent 5,137 days in hospital, giving an average of 31 days per patient. This compares with 53 days per patient in England.<sup>13</sup> The cost per patient per day was 55s., and as the number of patients per year in this series was 260 (the 519 were the total of 2 years) the expenses for a period of 1 year were £22,165.

Similar calculations for non-Europeans in Johannesburg<sup>1</sup> showed that 398 patients were 8,858 days in hospital with an average of 22 days and at a cost of 20-5s. per day. If the notification rate is estimated at 70 per 100,000,<sup>1</sup> there is an annual total of 325 cases, and as all cases are hospitalized there must be an expenditure of £7,340 per year.

Consequently, the city of Johannesburg is paying approximately £30,000 annually for treatment of hospitalized diphtheria patients and at the same time maintaining an immunization clinic, which so far has been without influence on the morbidity of the disease.

It can only be regretted that the public does not make better use of the facilities offered to them.

#### DISCUSSION

In general the diagnosis appeared to be correct; in only 30 cases was there doubt. Accepting the figures, the question arises as to how the complications and death rate may be further reduced.

Administration of antitoxin before the 5th day of illness has been shown to be of primary importance in this series where *C. diphtheriae* type *mitis* was responsible for 85% of the cases.<sup>4, 5</sup> As the difference in 'virulence' of the 3 diphtheria types can be explained as their ability to produce toxin rapidly (*gravis*) or slowly (*mitis*),<sup>19, 20</sup> it would be expected that the maximum 5-day limit for antitoxin administration would be considerably shorter in *gravis* and *intermedius* infections. This corresponds with Paschlau's finding<sup>10</sup> in a series of cases of 'malignant diphtheria', that if antitoxin was given after the 2nd day of illness it was without effect on the disease. It also accords with Amies' observation<sup>9</sup> that the time of antitoxin treatment was more important than the dose of antitoxin. This would explain the severe course of *gravis* infection<sup>2, 21</sup> without postulating sero-resistant cases<sup>21, 2</sup> or the presence of two or more types of toxin.<sup>22</sup> Consequently the first aim must be that of early diagnosis. This, in fact, is about all that can be done at present in clinical diphtheria.

**Antibiotics.** Penicillin inhibits the multiplication of *C. diphtheriae*,<sup>23, 24</sup> but it is almost certain that it has no influence on the absorption of toxin or on its pathological action.<sup>25, 26, 27</sup> However, Hewitt<sup>28</sup> has shown that guinea-pigs experimentally infected with a suspension of toxigenic diphtheria organisms and treated with terramycin die 1-6 days later than either control animals or penicillin-treated animals.<sup>23</sup> Administration of a small amount of antitoxin, sufficient to neutralize the toxin injected with the suspension, did not prevent death. It was therefore concluded that the toxin was produced during the terramycin treatment, and that the terramycin had no influence on its action though it did delay death.

Lall and Karelitz<sup>29</sup> treated 6 cases of diphtheria with antitoxin and terramycin and 6 diphtheria carriers with terramycin only. None of the patients developed any complications, and they were all bacteriologically negative in less than a week (an average of 2½ days). The reports are interesting, but only observations on a large scale will show whether these favourable results with terramycin are of true value in the treatment of diphtheria.

**Glucose.** Amies<sup>30</sup> found that toxin formation *in vitro* was inhibited by a glucose concentration of  $\pm 0.25\%$  and that a dissociation of toxigenic to atoxigenic organisms occurred at a glucose level of  $\pm 0.075\%$ . Harries and Mitman<sup>31</sup> advocate the use of glucose intravenously in cases of toxæmia and myocarditis, partly because it should serve as an energy supply for vital organs, partly because glucose is believed to protect the heart muscle from the effect of the toxin. Friis-Hansen *et al.*<sup>32</sup> found experimentally a reduced glucose-tolerance in rabbits exposed to various amounts of diphtheria toxin. Formal

proof of the value of glucose administration in diphtheria-therapy is still lacking.

**Cortisone and related compounds.** Very little has been written on the use of cortisone in the treatment of diphtheria. Rosenbaum and Obrinsky's work<sup>33</sup> dealing with its effect in experimentally infected guinea-pigs is one of the few publications on the subject. Cortisone could not apparently prevent death or significantly increase the survival time, nor could it prevent adrenal haemorrhages. On the other hand, it did not interfere with the protective action of antitoxin. The experiments do not suggest that cortisone is of real value in the treatment of diphtheria. However, our knowledge of cortisone and related products is still very inadequate and extensive studies are needed before their values can be assessed.

In brief: the only effective therapeutic agent we possess is antitoxin but its value is limited to the early stages of the disease. Because it will be given too late in a number of cases, the best method of preventing death from diphtheria is active immunization.

#### SUMMARY

1. A description of 519 relatively mild cases of diphtheria is given.
2. *C. diphtheriae* was demonstrated in 73.7% of the cases. The chance of isolating *C. diphtheriae* was the same early and late in the disease and was independent of previous active immunization. There was evidence that it was more difficult to demonstrate the organisms in the members of the youngest age-groups.
3. Complications were not more frequent in patients in whom *C. diphtheriae* was isolated than in those in whom it was not.
4. The diphtheric focus and the combination of diphtheric foci were of prognostic value. Nearly all toxic complications occurred in connexion with membranous exudate on the tonsils.
5. 75% of the deaths and the majority of complications occurred in children below the age of 6 years.
6. Antitoxin was found to be the only remedy of value in the treatment of the disease, but its effect is limited to the first 4 days of illness when type *mitis* is the responsible agent. In *gravis* infections, however, it appears from the literature that the time limit for beneficial effect of antitoxin treatment is restricted to the first 2 days of illness.
7. Only 60% of the cases were admitted before the 5th day of illness.
8. The expenditure in Johannesburg on the hospitalization of diphtheria patients is assessed at approximately £30,000 a year.

I wish to acknowledge my indebtedness to the late Dr. P. Bayer, Superintendent of the Fever Hospital, for his keen interest in my work and the permission to publish these figures; to Mr. N. Berg-Sonne, lecturer in mathematics at the University of the Witwatersrand for the statistical analysis and for valuable criticism; and to Dr. J. F. Murray and Dr. J. Mason for advice.

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## AN EVALUATION OF THIERSCH GRAFTING IN MASTOID CAVITIES

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The question whether Thiersch grafting of a mastoid cavity is of definite advantage has been a controversial subject for some years. There is a general trend towards increased popularity in recent years.

Several years ago the author kept records of the period required for complete healing in a series of 38 consecutive cases. This was followed by a consecutive series of 106 grafted mastoid cavities, during which period similar observations were also made on a concurrent group of fenestration cavities.

On surveying the literature one found that there was great variation in the ultimate results. Further perusal showed that this might be due to (a) the technique of Thiersch grafting, or (b) post-operative management. The figures were also dependent on the assessment of a healed mastoid cavity.

This paper is divided into a brief description of

- (1) the types of cases,
- (2) Thiersch grafting and the technique employed,
- (3) the post-operative management and results, and
- (4) the assessment of a healed mastoid cavity; and
- (5) a comparison of the results of other authors, and
- (6) conclusions.

### (1) The Cases

The total number of cases operated on was 208, including fenestrations. These were European adults operated on in private nursing homes. Almost all cases coming for operation were included. Cases with complications arising from the mastoiditis, such as meningitis, cerebral abscess or sinus thrombosis, were excluded; these numbered only 2. Cases that had previous mastoid operations and where a skin-lined cavity existed were similarly excluded.

### (2) Thiersch Grafting

There are 3 essentials required in Thiersch grafting, viz. (a) A clean flat-walled mastoid cavity, i.e. one with

no bony overhang and cleared of all pathology, (b) preparation of a tissue-paper-thin epidermal graft, and (c) intimate apposition of this graft to the cavity walls, using a dressing or mould specially chosen for this purpose.

The greatest single advantage claimed for Thiersch grafting is improved epithelialization with subsequent quicker healing.

It is generally accepted that there is a better 'take' on a granulating surface than on bare cancellous bone. Padgett, quoted by Guildford,<sup>8</sup> states that in primary grafting on bare cancellous bone there is only a 50% 'take'. Also in mastoid cavities, maceration of this epithelium is believed to be more frequent than in skin-grafting elsewhere, leading to slower healing. Luers also believes that mastoid cavities frequently become lined with mucous membrane from the middle ear instead of true squamous epithelium. Primary and secondary skin grafts have been employed by various operators. Each method has its merits.

In secondary skin grafting, the take is almost 100%; a healthier epithelium lines the cavity and infection and maceration are less marked. The graft placed on a granulating surface becomes fixed by fibrin in 24-48 hours. Vascularization begins in 18 hours, and on the 8th day the blood supply is complete. With a greater blood supply there will be less exfoliation of the graft.

These advantages claimed for secondary Thiersch grafting are neutralized by the fact that in secondary grafting 10-14 days are lost and the patient has to be re-admitted for another operation.

In this series the author employed primary Thiersch grafting throughout. The methods of application of the grafts vary; some are simple, some tedious, but the ultimate result is dependent more on the exenteration of diseased tissue, good drainage and an easily accessible cavity, than on the method of application of the graft.



The most perfect graft will not give a dry ear if these other factors are not attended to.

It is not intended to discuss the detailed technique of Thiersch grafting of mastoid cavities, but a summary is presented of the procedure employed. An endaural approach has been used throughout, using the Shambough incision as modified by Meltzer,<sup>7</sup> who undermines and excises the subcutaneous tissue and some cartilage beneath the concha. In preparing the cavity the gouge, hammer and electric drill are used. A very thin graft is taken from the upper inner thigh and flattened on *tulle gras*, which is then cut to shape and laid into the cavity to cover the middle ear and bony cavity regions completely. Complicated cases were not grafted. Exposed dura, lateral sinuses and facial nerve were grafted over whenever they presented.

An alginate ('Calgitex Red') has been found the most favourable pressure dressing and has been used in all cases, including fenestrations. This dressing possesses certain excellent qualities: (1) It expands into a gelatinous mass, filling the cavity completely and pressing down the graft (I do not think any grafts could be 'floated up' from beneath by blood or exudate). (2) It is non-irritant and allows exudate to escape through it towards the external dressings. (3) It is non-adherent on removal, which procedure becomes almost painless. Its application is simple and not time-consuming.

Expense alone has prevented a more liberal use of this dressing. Mosher<sup>1</sup> used basket moulds. Melted wax moulds were used by Daggett and Bateman.<sup>2</sup> Farrior<sup>5, 6</sup> uses synthetic sponge and rayon with great success.

The operation, the post-operative management and the final assessment in this series have been done only by the author and the same trained staff, with a view to attaining a uniform standard of assessment throughout.

### (3) Post-operative Management

The first dressing was done on the 5th day, the second on the 7th day and subsequent dressings daily. The *tulle gras* covering the graft was removed on the 10th-14th day. Superficial desquamated epithelium of the grafts was removed from the 14th day. Syringing of cavities was avoided.

The results in the 106 grafted cases were as follows:

1. The grafts took in every case, but not always completely. The 'take' was poorer with thicker grafts. Cholesteatomatous cavities invariably took the grafts very well and healed rapidly.

2. There was much less pain in the early post-operative days owing to the protection afforded by the graft over tender, raw areas.

3. Fewer granulations formed in the healing mastoid cavities. In no grafted case was there any adhesion formed between the dura and facial ridge. The high incidence of dry ears was gratifying and no meatal stenosis occurred in a single case. I attribute these results, chiefly to vigilant after-care by highly trained staff; ribbon gauze pressure-dressings were used in the cavity and meatal opening, changed daily or alternate days for a period of 3-6 weeks in every case. Ear drops were not used or advised. Cavities that were discharging were mopped dry and powdered with a urea-boracic-

sulphonamide powder and more recently with a mixed antibiotic powder. Bacterial flora were not investigated, and all cases were given penicillin only whilst in hospital for a period of 7 days. One mild form of perichondritis occurred (in the 38 ungrafted cases 3 cases of perichondritis occurred).

### (4) Assessment of a Healed Mastoid Cavity

The criteria employed by different authors varies considerably. It might be a cavity that has been absolutely dry for a week, or for a month, or one where there are still traces of moisture or one where it is only obvious discharge that has ceased.

Epithelialized cavities are not necessarily quite healed, while imperfectly epithelialized cavities can be dry for long periods. In this series, a cavity has been assessed as healed when all traces of moisture have disappeared for a minimum period of 1 month, the ear being inspected every week for traces of moisture.

### (5) Results and Comparisons

In arriving at results, the arithmetical mean of the healing time of each of the 3 series of cases has been taken separately. Certain cases, however, have to be excluded and these are:

All operated cases (grafted or ungrafted mastoids or infected fenestration cases) where there is a persistent discharge and healing appears to be delayed indefinitely. This is done for the reason that such cases will cast an incorrect reflection on the cases that have healed. The healing of a cavity has been counted as indefinitely delayed where discharge has persisted for over 6 months or where breakdown has occurred frequently. Country cases whose follow-up have not been possible have been excluded as well.

#### Fenestration Cases

The author is fortunate in having had these cases available as a control, since a fenestration cavity merely requires to become epithelialized without having to overcome pre-existing bone infection. There were 62 ungrafted fenestration cavities, and the average healing time of these was 10.5 weeks.

The ungrafted mastoid cavities, 38 in number, took an average healing time of 15.3 weeks.

In the 106 grafted (endaural) mastoid cavities the average healing time was 9.2 weeks.

In the published results of other authors one finds the following results.

Daggett and Bateman<sup>2</sup> grafted 71 cases, using delayed grafting. They claimed improved results, but have not estimated the periods of healing.

Farrior<sup>5, 6</sup> strongly supports primary Thiersch grafting, but quotes no cases although judging from his papers he has done a large series of both fenestrations and mastoids.

H. L. Williams<sup>3</sup> used primary grafts on 14 cases; dry cavities followed in 8 weeks in 13 out of 14 cases. He sews the graft over moulds of conical-shaped sponges and sutures the graft to the skin edges of the cavity.

Cunning<sup>10</sup> states that the healing time in ungrafted cavities varies between 8 and 16 weeks. He used primary

grafts in 72 cases and advocates the method strongly, but gives no analysis of his healing time.

Guildford<sup>8</sup> used secondary skin grafts in 60 fenestrations. The average healing time was 9.3 weeks for all cases—including cavities with delayed healing. With secondary skin grafting in uninfected cavities his average was about 7 weeks. In 100 cases of fenestrated cavities ungrafted, the average healing time was 18 weeks.

Withers, Dickson and Wattleworth<sup>9</sup> quote 20 ungrafted mastoid cavities. The healing times average 9.3 weeks.

Leon White<sup>11</sup> collected 100 cases and states that there was no difference between grafted and ungrafted cavities.

#### (6) Conclusions

Although the author's series is comparatively large, one cannot draw definite conclusions. There are, however, certain deductions that can be made, which are shared by several other operators.

Primary Thiersch grafting definitely lessens the healing time in endaural radical and modified radical cavities, but where for some reason otorrhoea is persistent post-operatively, some other factor besides failure of epithelialization is operating and then grafting is of no avail.

It is interesting to note that grafted mastoid cavities take the same time to heal as ungrafted fenestration cavities, or less. It follows, then, that grafted fenestration cavities should heal still more rapidly, possibly in under 9 weeks. The author has as yet had no opportunity to graft fenestration cavities, but hopes to produce a series in time.

In the series recorded by the other authors quoted there is great variation in the healing time. In ungrafted cases it varies from 9 to 25 weeks. Some of the series too are very small.

Amongst the number of greatly varying factors which one cannot standardize in such series are:

(a) The variation of types of cases operated on. Williams<sup>3</sup> grafted only 'radical' cavities, Shambough<sup>4</sup> 'modified radical'. Farrior<sup>5,6</sup> describes endaural mastoid cavities which includes, presumably, radical and modified radical cavities.

(b) The assessment of a healed cavity.

(c) The variation in technique in applying grafts.

(d) The variation of grafts, e.g. primary or secondary.

The validity of comparison is therefore dubious, but certainly less dubious in a triple series emanating from one source as reported in this article.

#### SUMMARY

Thirty-eight ungrafted endaural mastoid cavities were observed in order to assess their healing time, i.e. the time taken to acquire a dry and healed mastoid cavity. A series of 62 fenestrations (ungrafted) were investigated in a similar manner concomitantly with a series of 106 grafted mastoid cavities. The technique was uniform throughout and so were the post-operative conditions and final assessment of cases. The results calculated on the arithmetical mean of each individual series showed that (a) ungrafted cavities took 15.3 weeks to heal, (b) fenestration cavities 10.5 weeks, and (c) grafted cavities 9.2 weeks.

In reports by other authors, there was great variation in healing time, due obviously to the great number of variable factors, e.g. type of operation, post-operative management, assessment of a dry ear, and the number of surgeons contributing to a single series. The general conclusion, however, was that grafting of mastoid cavities definitely reduces healing time.

Grafting should therefore be of even greater value if employed in fenestration cavities.

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## HYDRANENCEPHALY

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With the greatly improved outlook which modern surgery now lends to at least some cases of hydrocephalus<sup>1</sup> it becomes increasingly important to establish a more exact diagnosis than has been generally practised in the past. Not only must the type of hydrocephalus be determined, but those cases of gross cerebral defect, such as that here reported, in which the most ingenious of operations could produce no real improvement, must be rigidly excluded from operative programmes.

The following case is reported not only because of its

rarity but also to draw attention to the problem of hydrocephalus, a condition too often regarded as being of interest only to the more eccentric of morbid anatomists. Such an attitude on the part of the clinician is no longer justifiable.

#### CASE REPORT

D.C. was born, after an uneventful pregnancy, on 22 May 1954, the first child of normal healthy parents. Presentation was vertex, and there was some difficulty with the birth of the head, which

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was noticed to be larger than normal. The birth weight was 6 lb 2 oz. Hydrocephalus was confirmed by a paediatrician 2 days after birth. The child was admitted to hospital on 27 July at the age of 2 months with a history of coryza and difficulty with feeding for the previous week. Examination revealed a thin infant weighing 7 lb 3 oz with obvious hydrocephalus. The maximum head circumference was 16½ inches, the anterior fontanelle large and tense. The eyes were depressed and wandered independently; the ocular fundi showed pallor of the discs. All four limbs moved, and no abnormality was detected in their muscular tone or in the reflexes. The child was apyrexial throughout her stay in hospital, but considerable difficulty was experienced with feeding, more marked when the intracranial pressure was high and improving after ventricular tap with relief of tension.

**Special Investigations.** Examination of ventricular fluid obtained by puncture through the lateral angle of the anterior fontanelle yielded the following results: Polymorphs 66 per c. mm., lymphocytes 27 per c. mm., protein 200 mg. %, globulin increased ++, chlorides 605 mg. %, sugar 78 mg. %.

The cellular content subsequently decreased but the protein rose to 700 mg. % 3 weeks after admission. Lumbar-puncture fluid showed only 4 lymphocytes per c. mm., protein 160 mg. %, and chlorides 780 mg. %. These figures indicated that there was no communication between the two volumes of fluid sampled, and this was confirmed by failure of a dye (methylene blue) injected into the 'lateral ventricle' to appear in the CSF on lumbar puncture.

Tuberculin tests and the Wassermann reaction were negative. Ventriculography was performed by replacing 300 c.c. of intracranial CSF with oxygen, via the anterior fontanelle. The plates obtained (Figs. 1-4) were striking and diagnostic of hydranencephaly. Advantage was immediately taken of the darkened

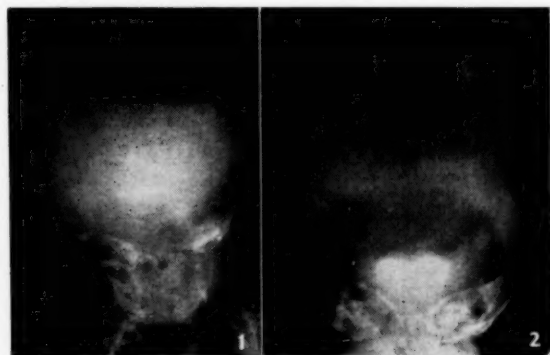


Fig. 1. Vertical antero-posterior view, showing the enormous cavity with fluid level and no evidence of ventricular pattern or cerebral cortex.

Fig. 2. Horizontal antero-posterior view, showing the typical prominent basal ganglia.

X-ray room to attempt transillumination of the head and, on shining light directly into the region of the antero-lateral fontanelle, a faint red glow was observed from the opposite side. A subsequent attempt to demonstrate this a week later proved unsuccessful, and some doubt was cast on the original finding. Pupillary transillumination as described by Hamby *et al.*<sup>2</sup> was never elicited in this case, perhaps because of the frontal-lobe remnants which appear to cover the orbits in Figs. 3 and 4.

Electro-encephalography unfortunately could not be undertaken.

**Follow-up.** When last seen (December) the child, now 6 months old, had grown considerably, but the head had enlarged out of all proportion to the rest of the body. Mentally there had been no development since birth. Definite spasticity of all four limbs, with exaggerated tendon reflexes and clonus, was now present. The maximum head circumference was 21 inches. Transillumination of the head showed a uniform glow interrupted only by the relatively small cranial bones and the scalp vessels.

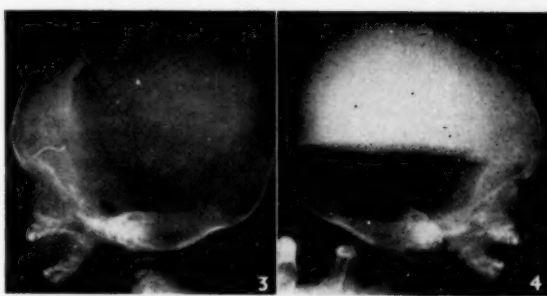


Fig. 3. Horizontal lateral view.

Fig. 4. Inverted vertical lateral view, showing some cerebral tissue in the frontal region and in the posterior fossa.

#### DISCUSSION

Hydranencephaly may be defined as a congenital anomaly of the head consisting of complete or nearly complete absence of the cerebral hemispheres, together with intact meninges and skull, and a variable degree of head enlargement.<sup>6</sup> The condition was first described by Cruveilhier in 1835 as *l'anencéphalie hydrocéphalique*. Although subsequent cases have been labelled porencephaly,<sup>3</sup> schizencephaly,<sup>2</sup> or schizencephaly with hydrocephalus,<sup>4</sup> the term hydranencephaly, first used by Spielmeyer in 1905, would seem worth retaining for its descriptive simplicity. It is to be noted that as in so-called anencephaly the basal ganglia and brain stem are intact, or indeed hyperplastic.<sup>2</sup> The defects in the hemispheres are roofed over by an ependymal membrane containing arteries and veins. Yakovlev and Wadsworth<sup>2</sup> from their extremely detailed histological analysis conclude that the condition is the result of defective development of the neopallium and is in no way secondary to vascular disturbance or inflammatory or degenerative destruction of already-formed cerebral tissue. They prefer, therefore, to classify these cases in the schizencephalic group to distinguish them from the encephaloclastic porencephalies, though 3 of their cases undoubtedly correspond to what is understood by hydranencephaly. Cohn and Neumann<sup>3</sup> describe a case with bilateral fronto-parietal defects in which there was apparent communication between the subarachnoid space and the ventricular system, and on the basis of Heschl's (1859) definition refer to their case as one of porencephaly, though it, too, fits the definition of hydranencephaly. Beswick<sup>4</sup> described 3 cases in which subdural haematoma was suspected, and in which the correct diagnosis was made by ventriculography. Two showed a block to the dye test, and 2 were subjected to exploratory craniotomy, which confirmed the diagnosis.

Hamby *et al.*<sup>5</sup> describe 7 cases, which appear to include the 3 of Beswick.<sup>4</sup> The dye test, performed in 4 of these cases, showed a block in 3. In 2 of them the protein content of the intracranial fluid was raised (in one up to 2.9 g. %). They regard transillumination of the head as the simplest and most helpful single sign, but point out that it has been reported in simple internal hydrocephalus where the cortex is not more than 3 mm.

in thickness. It is therefore, though extremely suggestive, neither diagnostic nor essential. Electroencephalography showed no cortical activity in their cases.

Olive and du Shane<sup>6</sup> report a case of hydranencephaly in which an unusual degree of transillumination was present as a result of defective calcification of the skull bones. A further case, developing hydrocephalus at 5 weeks and dying at 57 days, is reported by Mazur.<sup>7</sup>

The case here reported differs from most in the literature in that hydrocephalus was present at birth. Furthermore the pleocytosis and low chloride-content of the ventricular fluid are findings that have not previously been recorded.

The main features of the condition may be summarized as follows:

1. The infant usually appears normal at birth, but head enlargement may be perceptible at this stage.
2. A variable degree of hydrocephalus is as a rule the presenting symptom.
3. Mental development is grossly retarded and may, particularly in the later stages, be associated with spasticity and convulsions.
4. Investigations reveal:
  - (a) Transillumination of the head in the majority of cases.
  - (b) A variable CSF, in some cases with a high protein content, and cells may be present.
  - (c) A block to dye test in most cases.
  - (d) Virtually no cortical activity in the electro-encephalogram.
  - (e) A typical picture on ventriculography.
5. The course of the disease is a steady deterioration

until death, usually in the first year, though cases have survived 3 years.

#### SUMMARY

A case of hydranencephaly with some previously unrecorded features is described and the relevant literature briefly reviewed. The possible confusion of this condition with cases of potentially operable hydrocephalus is stressed and an appeal made for more careful sifting from the latter.

My thanks are due to Dr. H. L. Wallace, Senior Visiting Paediatrician, and Dr. J. V. Tanchel, Medical Superintendent, Addington Hospital, for permission to publish this case. I also wish to thank Dr. Wallace for much helpful criticism and advice.

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#### ADDENDUM

Since the preparation of this paper a further case has been seen. A premature baby (birth weight 4 lb) was admitted at the age of 10 days because of feeding difficulties. It was noticed that the face was peculiar, with prominent eyes and a deficient nasal septum, but there was no obvious head enlargement. Skull X-ray showed no abnormality. Two weeks later the maximum head circumference was 13½ inches. Transillumination of the head revealed a horrifying translucency of the whole cranium, and subsequent air-studies confirmed the diagnosis of hydranencephaly.

### OBSERVATIONS FROM A HOSPITAL BED

E. JOOSTE, M.D.

*Benoni*

6 February 1955

This is my 5th post-operative day in a State hospital following the removal of a gangrenous pelvic appendix. That most unpleasant post-operative nausea and vomiting and that much anticipated but yet dreaded first bowel movement are things of the past. Notwithstanding the discomfort of a horrible rubber drain sticking out of my abdomen like a lonely road sign indicating the direction the cocci ought to travel, I am beginning to sit up and take notice of the things about me.

It has been forcibly brought home to me how little we doctors really know what is happening to our hospital patient who, we fondly believe, is having a perfect rest. Is this at all possible under the following conditions? Just look at this brief 24-hour routine schedule, which I jotted down today and which, mark you, does not include any special treatment such as injections or medicines and also does not include the palaver of a bowel movement or the effort of being polite, pleasant and informative to well-meaning visitors:

- 4.15 a.m. A nurse barges into room, switches on a bright blinding light and without a 'Good morning' or any other salutation, shouts from the door, 'Tea or coffee'?
- 4.30 a.m. Nurse fetches cup.
- 4.35 a.m. to 4.45 a.m. Washed.
- 4.55 a.m. A mouth wash is brought in and I brush my teeth.

- 5.12 a.m. Door opens and a nurse peeps in.
- 5.35 a.m. Bed is made up.
- 5.45 a.m. Staff nurse makes a round with the night sister.
- 6.35 a.m. Staff nurse takes temperature.
- 6.50 a.m. Nurse fetches 'bottle'.
- 7.10 a.m. Nurse brings in breakfast tray.
- 7.25 a.m. Staff nurse takes temperature.
- 7.30 a.m. Servant brings in flowers.
- 7.35 a.m. Nurse brings in clean towels.
- 7.36 a.m. Servant removes breakfast tray.
- 7.40 a.m. Two nurses do a real proper job of making up the bed.
- 7.50 a.m. Native boy sweeps the floor.
- 7.55 a.m. Another Native boy polishes the floor and dusts.
- 8.05 a.m. Newspaper boy.
- 8.10 a.m. Native girl scrubs the bedside locker and washbasin.
- 8.55 a.m. The sister has a look round!
- 10.00 a.m. Tea is brought in.
- 10.15 a.m. Washed, and bed is made up.
- 10.30 a.m. Native girl brings jug of water.
- 11.15 a.m. Staff nurse looks in and cannot resist a few tugs at the bed.
- 11.30 a.m. Tray brought in for lunch.
- 11.45 a.m. A very young and obviously most inexperienced little nurse flutters in with, 'Are you a four-hourly temp.?'



and forthwith proceeds to take my temperature by leaving the thermometer in my mouth for just as long as it takes her to determine my pulse.

- 11.50 a.m. to 12.20 p.m. Routine of lunch.
- 2.00 p.m. Nurse takes temperature.
- 2.03 p.m. Sister stands at the door and says, 'Are you all right, doctor?'
- 2.05 p.m. Native boy sweeps a floor that is shining with cleanliness.
- 2.15 p.m. Two nurses displaying no interest whatsoever in my hacking cough or tearing abdomen, roll me from side to side and up and down to put on clean sheets.
- 2.35 p.m. Tea time.
- 2.45 p.m. Native removes tea cup.
- 2.50 p.m. Visit from staff nurse.
- 3.00 to 4.00 p.m. Visitors.
- 4.35 p.m. Nurse removes flowers
- 4.37 p.m. Nurse replenishes jug of water.
- 4.45 p.m. Two nurses come in to rub my back and make up the bed.
- 5.00 p.m. Nurse brings in empty tray for supper.
- 5.15 p.m. Nurse asks whether there are any ash trays to be emptied!
- 5.27 p.m. to 5.45 p.m. Supper.
- 5.50 p.m. Nurse looks for cups.
- 5.55 p.m. Two junior nurses, without showing the slightest interest in me or my distended, painful, rubber-drain carrying abdomen, roll me over to rub my back. All the time they chatter happily about the lovely picture they saw last night, and 'Oh boy, when I'm off next time, I'm going to . . . etc.' My back finished, I am hauled up to the sitting position and my bed again very neatly made up—the whole operation concluded without a personal comment or enquiry!
- 6.05 p.m. An assistant matron, duly accompanied by the staff nurse, does a round.
- 6.25 p.m. Temperature taken and bed pulled straight.
- 7.00 to 7.30 p.m. Visitors.
- 7.55 p.m. Nurse peeps in at the door.
- 8.00 p.m. Nurse brings a cup of Milo.
- 8.05 p.m. Day staff nurse says Good night.
- 8.05 p.m. to 9.00 p.m. Relax and enjoy some peace, recovering from the multitudinous shocks of the day.
- 9.00 p.m. Knowing that the same ordeal is to start at 4.00 a.m. tomorrow and also aware of the fact that I have no hope of going to sleep at 9.00 p.m., I now resort to a Seconal, with variable consequences!

A review of this schedule will show that it is no exaggeration to say that, as a routine, someone will enter your room at least 50 times a day.

#### 13 February 1955

This is my 12th post-operative day and, because things have not just been quite normal, I am still in hospital. This has given me a chance to chat with other patients, lay and professional, and to record some further observations.

The above-recorded routine varies only very slightly from day to day and is rigidly and relentlessly adhered to, irrespective of what the patient is suffering from. In fact the majority of the junior nurses, who do the bulk of the work, have no idea what your complaint is. A colleague, suffering from coronary thrombosis, felt particularly sore about the deadly routine and lack of peace.

Another very strong impression one gets is the impersonal nature of the extensive attention one receives. This impression is no doubt due to the fact that over a 24-hour period no less than 2 sisters,

3 staff nurses and 11 nurses have attended to you in some way or another . . . in fact a troop of nurses, training to become Florence Nightingales but without a spark of humanity or other evidence to justify the choice of their careers. Under the present set-up any humanism is of course almost impossible; witness the spectacle of a young nurse trying to be friendly by having a chat with the patient or looking at the head-lines of his morning paper, only to find that austere, bureaucratic ward sister remarks unexpectedly from the door, 'Nurse, will you please carry on with your work'.

The deadly routine of the junior nurse's job suggests that it is more important to keep her busy than the patient at peace. One is therefore constrained to ask, 'Is it not much better to have a comfortable patient in a somewhat untidy bed than a repeatedly harassed patient in a meticulously tidy one?'

After a week or so in hospital you come to realize that a whole troop of nurses have looked at and after you but nobody has nursed you. This lack of recognition of the fact that there is an imperative human need, which is particularly active during illness, and the fact that a sick person craves for human contact, are no doubt the result of the terrific scientific advance of medicine. As professor Khine puts it, 'Where science stepped in the soul stepped out'.

At the birth of this century medicine was still essentially the art of healing and man was still regarded as greater than the sum of his parts and as a member of a family and of society—Medicine's outlook was 'holistic'. As a result of the staggering array of modern scientific advances in medicine, the 20th century has witnessed striking achievements. The torrent of scientific discovery, however, has rushed on so impetuously that it has all but engulfed the humanism of medicine. I am well aware of the profound impact this has had on the medical profession but never, until now, have I given it a thought that the nursing profession may have undergone a similar fate.

#### CONCLUSION

In conclusion I would like to suggest two alterations in the hospital routine which may help to satisfy the patient's craving for human contact and more undisturbed rest.

1. The procedures between 4 a.m. and 7 a.m. could be completely eliminated with great benefit to the patient.

2. Less work would then be required of the night staff and thus 2 or 3 nurses could be transferred to day duties. In the ward I am in at present this would result in the 25 patients being cared for by 2 staff nurses and 8 or 9 nurses. Now I suggest that each nurse attends to 2 or 3 patients only and all the nurses and patients are supervised by the 2 staff nurses. This set-up will certainly give the nurse a personal interest in her patient, because she ministers to all his needs, and the patient in turn will feel that he is being cared for by an individual with all her potential humanism instead of an inhuman institution.

Finally, before going home tomorrow and back to practice within a week or two, I should like to record my gratitude for having experienced the patient's angle. This experience has enabled me to find a more realistic expression of the lofty ideals of our profession in the philosophy of William Osler, who said: 'I have three personal ideals: One, to do the day's work well and not bother about tomorrow. The second ideal has been to act the Golden Rule, as far as in me lay, towards my professional brethren and towards the patients committed to my care. And the third has been to cultivate such a measure of equanimity as would enable me to bear success with humility, the affection of my friends without pride, and to be ready when the day of sorrow and grief comes to meet it with the courage befitting a man'.

#### ASSOCIATION NEWS : VERENIGINGSNUUS

#### MINUTES OF MEETING OF FEDERAL COUNCIL HELD IN CAPE TOWN ON 16, 17 & 18 MARCH 1955

Minutes of a meeting of the Federal Council of the Medical Association of South Africa, held at Red Cross House, Cape Town, on 16, 17 and 18 March 1955.

Present: *Ex Officio*: Dr. J. H. Harvey Pirie (Immediate Past Chairman), Dr. J. S. du Toit (Honorary Treasurer).

*Border Branch*: Dr. L. L. Alexander, Dr. R. Schaffer.

*Cape Midlands Branch*: Dr. L. E. Lane (President), Dr. M. A. Robertson.

*Cape Western Branch*: Mr. J. A. Currie, Dr. J. P. de Villiers, Dr. F. O. Fehrsen, Dr. A. I. Goldberg, Dr. R. Lance Impey,

Dr. A. Landau, Dr. J. R. E. Lee, Mr. T. B. McMurray, Mr. J. A. S. Marr, Dr. F. W. F. Purcell, Mr. M. Cole Rous, Dr. A. W. S. Sichel (Chairman of Council).

*East Rand Branch:* Dr. M. Segal, Dr. E. W. Turton.

*Griqualand West Branch:* Dr. J. P. Collins.

*Natal Coastal Branch:* Dr. A. Broomberg, Dr. E. W. S. Deale, Dr. H. Grant-Whyte, Dr. N. A. Rossiter, Dr. A. B. Taylor.

*Natal Inland Branch:* Dr. B. A. Armitage, Dr. A. L. Young.

*Northern Transvaal Branch:* Dr. J. G. A. du Toit, Dr. J. H. Struthers (Vice-Chairman of Council), Dr. J. H. Sypkens, Dr. W. Waks, Dr. F. Ziady.

*O.F.S. & Basutoland Branch:* Dr. D. Serfontein, Dr. R. Theron, Dr. G. F. C. Troskie, Dr. J. S. Visser.

*Southern Transvaal Branch:* Dr. A. L. Agranat, Dr. J. Black, Dr. W. Chapman, Dr. J. Gluckman, Dr. S. C. Heymann, Dr. M. Peskin, Dr. T. Radloff, Dr. T. Schneider, Dr. M. Shapiro, Dr. L. O. Vercueil, Mr. J. Wolfowitz.

*Transkei Branch:* Dr. J. D. Joubert.

*In Attendance:* Dr. A. H. Tonkin (Secretary), Dr. L. M. Marchand (Associate Secretary).

*Observer:* Dr. T. Shadick Higgins (Editor).

### WEDNESDAY, 16 MARCH

The Chairman, Dr. A. W. S. Sichel, opened the meeting at 9.30 a.m. He welcomed members to the meeting and expressed the hope that visitors to Cape Town would have a pleasant stay.

1. *Notice Convening the Meeting*, which had been published in the *Journal* of 12 February 1955, was taken as read.

2. *Proxies and Apologies:* The Secretary announced proxies as follows: Dr. J. D. Joubert to act for Dr. I. R. Ross; Dr. M. Peskin to act for Drs. C. Adler, Lewis S. Robertson and G. T. du Toit. Apologies were received from Drs. H. C. Paradisgarden, Lewis S. Robertson, L. R. L. Solomon and I. R. Ross.

3. *Introduction of New Members:* Dr. Deale introduced Dr. N. A. Rossiter, of Durban; Dr. Schneider introduced Dr. J. Gluckman, of Johannesburg.

4. *Minutes of the Meeting of Council held in Pretoria on 28, 29 and 30 October 1954*, were *Confirmed and Signed*.

The Chairman asked whether members had any questions to put regarding the work of the Association or Council. There were no questions.

Before proceeding with the business of the meeting, the Chairman called on Dr. Purcell, as Vice-President of the local branch of the S.A. Red Cross Society and Chairman of the Civil Service Club, to make an announcement. Dr. Purcell welcomed members to Red Cross House and stated that the Committee of the Civil Service Club had agreed to all visiting members of Council being made honorary members of the Club during their short stay in Cape Town. The Chairman thanked Dr. Purcell on behalf of the Council.

### MATTERS ARISING OUT OF THE MINUTES

5. *Termination of Membership of Full-time Medical Officer:* The Chairman called for a resolution as a basis for discussion. It was proposed by Dr. Struthers, seconded by Dr. Waks, 'That as far as this matter is concerned, we take no action at this meeting of Federal Council'.

After discussion, an amendment was proposed by Dr. Shapiro, seconded by Dr. Grant-Whyte, 'That consideration of this matter be deferred to the next meeting of Council'.

Dr. Shapiro's amendment was put to the vote and *Carried Nem. Con.* It was also *Carried* as a substantive motion.

6. *District Surgeons' Affairs:* The Chairman referred to a deputation which was to wait upon the Minister of Health the next day.

Council *Agreed* that the deputation should consist of Drs. Sichel, Troskie, Serfontein and Joubert.

7. *Pathological Services in the Transvaal:* This item was considered in conjunction with Item 18(a) of the Agenda (Conference convened by S.A. Medical and Dental Council).

The Chairman stated that the S.A. Medical and Dental Council had convened a conference to discuss the ethical aspects of medical services provided by medical and lay bodies, and had asked that the Association be represented by two members. The Secretary stated that the Executive Committee recommended that Drs. Struthers and Shapiro represent the Association at the conference. *Council Agreed.*

Council then considered a memorandum submitted by the

Pathologists' Group, together with certain recommendations of the Group.

It was proposed by Dr. Gluckman, seconded by Mr. Wolfowitz, 'That Council accepts the recommendations contained in the memorandum of the Pathologists' Group, with the exception of the fifth recommendation.'

After prolonged discussion, an amendment was proposed by Dr. Shapiro, seconded by Mr. Cole Rous, that the report of the Pathologists' Group be accepted and the recommendations noted. This was put to the vote and *Carried Nem. Con.* It was also *Carried* as a substantive motion.

8. *Income Tax Deductions in respect of Postgraduate Study:* The Secretary submitted a report, in which it was stated that in accordance with the resolution passed at the last meeting of Federal Council, the matter had been placed before the World Medical Association. As a result, the Secretary General had sent a questionnaire to all national Medical Associations and the results would be made known in due course. *Noted.*

9. *Tariff of Fees for Medical Boards:* A letter from the Cape Western Branch, setting out suggested fees for Medical Boards, was submitted.

The Secretary stated that the Executive Committee had agreed to recommend to Council that the fees for Medical Boards proposed by the Cape Western Branch, together with their reasons, be accepted and that recommendations be made accordingly to the Commissioner for Pensions through the Parliamentary Committee. *Council Agreed.*

10. *'Guide to the Maintenance of Ethical Standards':* The Secretary reported that the Afrikaans translation of this booklet had been completed and the matter was now in the hands of the printers. It was expected that copies would be posted to all members within the next few weeks. *Noted.*

Council adjourned for lunch from 12.55 p.m. until 2.20 p.m.

### THE QUESTIONNAIRE

11. *Questionnaire on Registration of Specialists:* Members were referred to the Report prepared by Dr. J. P. de Villiers. Dr. de Villiers mentioned the assistance which the scrutineers had received from Drs. Joubert, Fehrnsen and Watson. He then elaborated on the Report.

Dr. Shapiro thanked the scrutineers for the work which they had done, and went on to say that he had prepared an analysis of the figures. He asked permission of the Council for these to be distributed. This was granted. He then moved, seconded by Dr. Broomberg, that the Report of the scrutineers, with such supplementary information or explanation as Council may think fit, be transmitted to the Minister and the Medical Council for information. On being put to the vote, this was *Carried*.

After discussion, it was proposed by Dr. Schneider, seconded by Mr. Wolfowitz, 'That Federal Council resolves that at this stage the Specialist Register shall be retained as at present'.

An amendment was proposed by Mr. Currie, seconded by Dr. Purcell, 'That the Federal Council interprets the result of the referendum as follows: (a) A majority of the voters were in favour of the retention of some sort of register; (b) A majority of the voters favoured a Register of Consultants; (c) A majority of the voters favoured a Statutory Register; (d) An overwhelming majority of the voters felt that specialists or consultants should not make domiciliary visits, except in consultation or in cases of emergency'.

On being put to the vote, the amendment was *Carried*. *Council Agreed* that this amendment should constitute 'such supplementary information or explanation' as envisaged in the earlier resolution above.

12. *Withdrawal of Recognition from Medical Aid and Benefit Societies:* A legal opinion was submitted. Dr. Marchand stated that the Central Committee for Contract Practice had noted this opinion.

After discussion, members indicated that they would like to have a supplementary legal opinion. Representatives of the Southern Transvaal Branch agreed, on behalf of the Branch, to submit a memorandum to the Secretary, amplifying the whole matter on which an opinion was desired, so that it might be re-submitted to the lawyers. *Council Agreed.*

13. *Confinement Fees—Mines Benefit Society:* The Secretary read a letter from the Honorary Secretary of the Mines Benefit Societies Medical Officers' Group, in which it was stated that the

members of Council. He moved that a resolution be passed to the effect that the Council should be asked to consider the matter.

14. *Remuneration of Council Members:* Dr. Vercueil moved that a resolution be passed to the effect that the Council should be asked to consider the matter.

15. *New Council Members:* Dr. Vercueil moved that a resolution be passed to the effect that the Council should be asked to consider the matter.

16. *Matters of Council:* Dr. Vercueil moved that a resolution be passed to the effect that the Council should be asked to consider the matter.

17. *Statutes of Council:* Dr. Vercueil moved that a resolution be passed to the effect that the Council should be asked to consider the matter.

18. *Medical Council:* Dr. Vercueil moved that a resolution be passed to the effect that the Council should be asked to consider the matter.

19. *Shorthand:* Dr. Vercueil moved that a resolution be passed to the effect that the Council should be asked to consider the matter.

20. *Financial:* Dr. Vercueil moved that a resolution be passed to the effect that the Council should be asked to consider the matter.

members of the Group would abide by the ruling of Federal Council. He stated that the Executive Committee recommended to Council that the letter be noted with satisfaction.

After a short discussion, *Council Agreed* to accept the recommendation of the Executive Committee.

**14. Remuneration for Anaesthetics—S.A.R. & H. Sick Fund:** Dr. Verucel said that it would be premature to discuss this matter at this stage, as the Sick Fund Board were considering the matter. He moved that the matter be deferred until the next meeting. *Council Agreed.*

**15. New Section 80 of Medical, Dental and Pharmacy Act:** Council *Noted* that a memorandum was still awaited from the General Practitioners' Group.

**16. Matters Raised by World Medical Association:** The Chairman stated that a meeting of Secretaries of national Medical Associations had been called by the World Medical Association to take place in New York following the British Commonwealth Medical Conference in Toronto. The Executive Committee had agreed that the Secretary should attend. *Council Agreed.*

The Secretary stated that at the meeting of Secretaries, matters which had previously been before Council, such as the establishment of funds for delegations of national Medical Associations to General Assemblies of the World Medical Association and the question of increasing the capitation rate of national member-Associations, would be items for discussion. In the circumstances the Executive Committee recommended to Council that further consideration of these matters be deferred until the Secretary returned from the New York meeting. *Council Agreed.*

**17. Status of Industrial Medical Officers:** The Secretary stated that this matter had been referred to the S.A. Medical and Dental Council and a reply had been received asking for further information. This was being obtained from the Society of Industrial Medical Officers and would be submitted to the Medical Council on its receipt. *Noted.*

**18. Medical Education and the Shortage of Interns:** The Secretary reported that the Executive Committee had considered these two matters in conjunction and had agreed to recommend to Council that a small sub-committee be appointed by Council, with power to co-opt, to enquire into 1 internships and 2 medical education, and to report to the next meeting of Council. *Council Agreed* to the principle of appointing such a sub-committee. After discussion, Council *Agreed* that the sub-committee should consist of Mr. M. Cole Rous (Convener), Mr. T. B. McMurray, Dr. J. R. E. Lee, with Dr. J. D. Joubert as a co-opted member. It was also *Agreed* that there should be corresponding members in the other Provinces. These would be Drs. Struthers, Segal and Ziady in the Transvaal, Dr. A. B. Taylor for Natal, and Drs. Theron and Visser for the Orange Free State.

**19. Shortage of Beds in Mental Hospitals:** The Secretary stated that following a resolution passed at the last Congress, letters had been sent to the Minister of Health and the Provincial Administrations regarding the provision of beds for psychiatric patients in Provincial hospitals. This had not met with great success. In the circumstances the Executive Committee had agreed to recommend to Council that an approach be made to the Minister of Health with regard to the provision of more accommodation for patients in mental hospitals, and that the Provincial Administrations be asked to support this request. *Council Agreed.*

#### THE FINANCIAL STATEMENT

**20. Financial Statement:** The Honorary Treasurer, Dr. J. S. du Toit, reported as follows:

"The audit for the year ended 31 December 1954 has been completed. The gross revenue from Advertising in the *Journal* amounted to £35,371, as against £28,967 in 1953, showing an increase of £6,404. This increase was due mainly to a large number of advertisers who agreed to give the *Journal* a trial as an advertising medium for their wares. Many of these advertisements have not been renewed as yet. The expenditure on Printing and Blocks for the *Journal* amounted to £18,398, being £2,177 less than the previous year. In 1953 the *Journal* contained 2,672 pages, while last year it consisted of 2,724 pages.

"Salaries and allowances were £1,090 higher than the previous year. New staff accounted for £615, the balance being paid in normal increments.

"Postages and telegrams cost £1,034, being a decrease of £152. Delegates' travelling expenses amounted to £2,072, being an increase of £291. Subscriptions from members and non-members

amounted to £11,931, being an increase of £373. The South African Journal of Clinical Science showed a loss of £279, while the loss was £302 in the previous year.

"The Agencies have shown no profit in spite of doing a considerable amount of work. The Cape Town Agency showed a loss of £319, Durban a loss of £104 and Johannesburg showed a profit of £275. The total loss of all Agencies was £148. The Medical Insurance Agency brought in £3,501, being an increase of £986.

"The Final Account showed a surplus of £5,705, and the Head Office and Journal Committee decided to recognise the valuable work of its staff by dividing a sum of £500 between them. The profits transferred to Accumulated Funds Account thus amounted to £5,205. This profit was entirely due to the considerable increase in advertising which we cannot be sure will be maintained, and bears no relation to the earlier increase on members' subscriptions.

"*Financial Report of the Benevolent Fund:* It is with pleasure that I must report that the income to the Fund during 1954 amounted to £4,998, being an increase of £384 over 1953. Of this amount, £1717 was received in interest on investments. Through the generosity of members and others, an amount of £199 was received 'In Memoriam' by means of votive cards, while £246 was received for Services Rendered. Both of these amounts are less than the previous years. Donations have increased and amounted to £2,836. Reference should be made with gratitude to the assistance of the Southern Transvaal Branch which contributed £1,442 as a result of special efforts. There were legacies amounting to £500.

"During 1954 grants totalling £2,315 were paid to beneficiaries. As at 31 December 1954 the accumulated funds totalled £40,664.

"On behalf of the Management Committee I would like to express great appreciation of the support which members give to the Association's Benevolent Fund."

The Honorary Treasurer then moved the adoption of his Report. *Council Agreed.*

Council adjourned at 6.20 p.m.

#### THURSDAY, 17 MARCH

The meeting commenced at 9 a.m., Dr. Struthers being in the Chair in the absence of Dr. Sichel.

#### MATTERS DEALT WITH BY THE EXECUTIVE COMMITTEE

**21. Orange Free State Goldfields Division:** The Secretary reported that the Executive Committee had approved the Constitution of this Division and recommended to Council that its action be confirmed. *Council Agreed.*

**22. Cost of Legal Defence in Criminal Charges Against Doctors:** The Secretary reported on negotiations which had taken place with the Atlas Assurance Company and read a letter containing an offer from the company to provide cover. This would be subject to an increase in the premium of 10/- per annum.

After discussion, it was proposed by Dr. Peskin, seconded by Mr. Wolfowitz and *Resolved:* "That the Secretary be instructed to provide full details re cover offered and fees charged by the Atlas Assurance Company, the Medical Protection Society and the Medical Defence Union and any other similar societies, and that such details be presented at the next meeting of Federal Council in tabulated form."

**23. Trades Exhibitions at Medical Congresses:** A letter from the S.A. Trades Exhibitors' Association was submitted and *Noted.*

Arising out of this matter, Dr. Broomberg said that the Natal Coastal Branch had considered postponing the Congress in Durban until 1957. A definite invitation to hold the Congress in Durban in 1957 would be extended to Council later. *Noted.*

**24. Empire Medical Advisory Bureau:** The Secretary stated that the Executive Committee had considered the assistance which the British Medical Association rendered to all overseas students, and recommended to Council that the following resolution be adopted and forwarded to the British Medical Association at the time of the Joint Meeting to be held in Toronto in June:

"Whereas the Medical Association of South Africa is deeply conscious of the work of the Empire Medical Advisory Bureau in assisting students from overseas countries,

It is resolved that the Medical Association of South Africa expresses its appreciation of this assistance rendered by the Empire Medical Advisory Bureau to students from South







the Society should prepare a memorandum for the information of all its members. *Noted.*

38. *Interview with Commissioner of Pensions:* It was reported that Dr. Sichel, Mr. Cole Rous and Dr. Marchand had interviewed the Commissioner on the question of free choice of doctor for pensioners requiring medical services on condition that they obtained prior permission from the Department. The Commissioner promised to discuss the matter with the Chief Pensions Medical Officer on his return to Pretoria. *Noted.*

Dr. Struthers then moved the adoption of his Report. *Council Agreed.*

39. *Supplementary Health Services Bill:* Arising out of the Report of the Parliamentary Committee, Dr. Schaffer asked whether representations were to be made regarding the Supplementary Health Services Bill. The Chairman replied that he had discussed the matter with the Secretary for Health and it was not known whether the old evidence which had been given by the Association previously would be taken over by the new Select Committee. *Noted.*

40. *Friendly Societies Bill:* Dr. Shapiro suggested that the Parliamentary Committee might consider this Bill. The Secretary stated a copy of the Bill had been obtained from the Clerk of the House and had been submitted to the Chairman of the Committee who had informed him that the Committee would not take any action. *Noted.*

#### *Report of Augmented Executive Committee in the Transvaal*

41. *Hospitals Commission Questionnaire:* A copy of the questionnaire, together with a copy of the replies drawn up by the Augmented Executive Committee after consultation with the Branches in the Transvaal, was submitted. These were *Accepted and Noted.*

42. *Dual Appointments to Part-time Posts in Transvaal Provincial Hospitals:* It was reported that the Director of Hospitals had stated that it was the definite policy of the Province not to appoint an applicant to a part-time post in a Provincial hospital if he already held such a post and some applicants had no appointments. A complaint by a medical practitioner in this matter was being investigated by the Medical Director. *Noted.*

43. *Meeting with Representatives of the Radiological, Pathologists' and Physical Medicine Groups:* It was reported that a meeting had taken place in Johannesburg.

After outlining the difficulties, Dr. Struthers stated that recommendations had been made in answer to the questionnaire and that he felt as far as was reasonably possible Council should support the Groups in their representations. *Noted.*

44. *Appointment of Part-time Medical Officers to Private Hospital Institutions:* A report was submitted concerning certain tuberculosis hospitals in the Transvaal, which, at the request of Dr. Struthers, was elaborated by Dr. Peskin.

Considerable discussion followed and it was proposed by Dr. Shapiro, seconded by Mr. Cole Rous, 'That it be a directive to the representatives at the meeting convened by the S.A. Medical and Dental Council on 18 March, from this Council, to ask for (a) a Commission of Enquiry and (b) effective machinery for the ethical control which will prevent medical practice from falling into the hands of private enterprise'. On being put to the vote, this was *Carried Nem. Con.*

Council generally *Agreed* that any further action to be taken in this matter should be done by the Executive Committee of Council.

Council further *Agreed* that Dr. J. G. A. du Toit be appointed an alternate member of the Augmented Executive Committee in the Transvaal.

Dr. Struthers then moved the adoption of his Report. *Council Agreed.*

#### ECONOMICS OF MEDICAL PRACTICE

45. *Report of Sub-Committee on Economics of Medical Practice:* The Convener, Dr. M. Shapiro, submitted a report regarding a meeting which had been held, at which terms of reference for the Committee had been drawn up. While the report generally was *Noted*, the terms of reference were discussed in detail. It was eventually *Agreed* that these should be as follows:

1. To investigate the cost structure of medical practice, with special reference to contractual medical practice in various centres of the Union, and to arrive at a determination of fair remuneration.
2. To investigate the pattern of medical practice, with special

reference to contractual medical practice in South Africa, and to make an analysis thereof.

3. If the existing pattern is found to be unsatisfactory, to make recommendations on future policy.
4. To prepare reports on the above, in order to have information available for dealing with responsible bodies and, in the event of a conference being convened, to deal with the implications of these matters.

Council adjourned at 5.55 p.m.

#### FRIDAY, 18 MARCH

The meeting commenced at 9 a.m., Dr. Sichel being in the Chair.

#### *Report of Workmen's Compensation Act Sub-Committee*

46. *X-Ray Fees:* The Convener, Dr. Vercueil, reported that his Sub-Committee had met the Workmen's Compensation Commissioner and had discussed the question of X-ray examinations carried out by general practitioners. He stated that the Commissioner had now agreed to pay accounts for such X-rays, provided they were endorsed: 'It was in the best interests of the workman that he should have been X-rayed at the time.' The Committee recommended that this be accepted. *Council Agreed.*

47. *Free Choice of Doctor:* It was reported that conversations had taken place with the Commissioner on this subject and that he had agreed to a round-table conference between himself, members of the Committee and representatives of the Federation of Industries. *Council Agreed* that this meeting should be convened as soon as possible.

Dr. Vercueil then moved the adoption of his Report. *Council Agreed.*

48. *Report of Sub-Committee on Rehabilitation:* No written Report had been submitted, and Dr. Peskin, who acted as proxy holder for the Acting Convener of the Sub-Committee, stated that he had received no instructions. *Noted.*

49. *Report of Sub-Committee to Advise Controller of Imports:* It was reported that this Sub-Committee had continued to advise the Department of Commerce and Industries as well as the Pharmaceutical Advisory Committee on the essentiality and desirability of medical supplies to be imported into the Union. Ten applications had been considered from importers, covering 19 products, of which eight items had not been recommended. Nine applications had been received from medical practitioners and one layman for importation of medical supplies or equipment not obtainable through the usual trade channels, all of which had been supported. The application of a layman for importation of special electrical apparatus had not been recommended. *Noted.*

50. *Report of Sub-Committee on Customary Fees for Medical Practice:* Dr. Landau presented a Report, stating that he regretted that it had not been possible to have the Report circulated. As many details had not yet been received from the Branches, it was in the nature of an interim report.

Council *Agreed* that the Report be circulated to all members of Council and that, if possible, a final report be submitted to the next meeting of Council.

After discussion, Council further *Agreed* that when all fees had been obtained from all Branches, they should be arranged in schedule form and circulated to all members of Council.

Dr. Landau then moved the adoption of his Report. *Council Agreed.*

51. *Report of Sub-Committee for Liaison with Dental Association of South Africa:* Dr. Schneider reported that there had been one meeting with representatives of the Dental Association, at which they had wished to know the attitude of the Medical Association in regard to the Commission of Enquiry into Hospital Matters in the Transvaal. Another question had been raised regarding the employment by specialists of general practitioners as their assistants on a full-time basis. They had wished to know whether this was common practice among medical men. The Secretary stated that he had received a similar query in a letter and he had replied that in his opinion the matter should be referred to the S.A. Medical and Dental Council for a ruling.

After discussion, Council *Agreed* that the Dental Association should be informed that an approach should be made to the S.A. Medical and Dental Council for a ruling in this regard.

Dr. Schneider then moved the adoption of his Report. *Council Agreed.*

52. *Report of Sub-Committee for Liaison with S.A. Nursing Association:* Dr. Waks stated that there had been no meeting since the last meeting of Council and that there was nothing to report. *Noted.*

53. *Report of Sub-Committee for Liaison with Pharmaceutical Society of South Africa:* Dr. Vercueil stated that he had approached the Society, but apparently there had been no problems to discuss. *Noted.*

#### *Report of Central Committee for Contract Practice*

The Report was presented by Dr. Vercueil who had been appointed Chairman of the Committee vice Dr. J. Q. Ochse resigned.

*Council Agreed* that the paragraphs of the Report be considered *seriatim.*

54. *Fees for Neuro-surgical Operations:* The recommendation of the Committee, which had been adopted at the previous meeting, had been suspended as it was apparently based on a misunderstanding. The Neuro-surgeons had later submitted a schedule for operations and pre-operative procedures, some of which were of a radiological nature, to which the Committee could not agree. The Committee now recommended to Council that a meeting should be called at which representatives of the Neuro-surgeons' Group, the Anaesthetists' Group and the Radiological Group should meet those members of the Committee residing in the Transvaal, in order that the whole matter might be discussed. *Council Agreed.*

55. *Anaesthetic Fees for Intracardiac Operations:* After negotiations extending over some two years, the Committee recommended that the following item be added to the Tariff of Fees for Approved Medical Aid Societies in the Section for Anaesthetics:

'Intracardiac Operations: Minimum of 15 guineas and a further 1½ guineas per quarter-hour after the first three hours.'

After discussion, it was proposed by Dr. Broomberg, seconded by Dr. Heymann and *Resolved* that consideration of an increased fee for anaesthetics in cases of intracardiac surgery be deferred until further information had been obtained from anaesthetists and thoracic surgeons.

#### NATIONAL MEDICAL AID SOCIETY

56. *National Medical Aid Society:* It was reported that the Society had replied to the suggested amendments to its Constitution as adopted at the last meeting of Council and had stated that it could not accept the proposal to restrict membership to salary and wage earners and their families. The resolution regarding income limits was acceptable to the Society, with the proviso that the restriction of persons earning more than £2,500 per annum should not apply to existing members. The Committee was of opinion that the item regarding salary and wage earners should not be enforced and therefore recommended that it be deleted.

*No decision was taken.*

It was reported further that the Society did not agree that it was necessary to alter its Constitution making provision for the submission of amendments affecting medical services to the Medical Association for approval before they came into force. It was pointed out that the Society had always notified the Association of any alterations to its Constitution and had no objection to continuing this practice. The Committee recommended that this matter should be pressed, so that the Society should come into line with other Medical Aid Societies in this respect. *Council Agreed.*

It was reported that Council's instruction to the Associate Secretary to investigate the method of control of the average income of members of the Society and the manner in which it was calculated, had not been carried out because the Society had advised that it was taking steps to satisfy the Association by:

1. obtaining more detailed data from the associated companies regarding the average income;
2. altering its application form so as to indicate in greater detail the salary of each member;
3. circularizing members to obtain up-to-date data regarding their salaries.

The Committee thought that it was advisable that the Society should have time to obtain the required information before the investigation was made. *Noted.*

After further discussion it was proposed by Dr. J. G. A. du

Toit, seconded by Dr. Waks, that the National Medical Aid Society should from time to time (say, every six months) produce proof to the Association that its members' incomes were still within the prescribed limit.

An amendment was proposed by Dr. Heymann, seconded by Dr. Grant-Whyte: 'That Council inform the National Medical Aid Society of its inability to continue discussions with the Society in regard to any of the matters previously raised, unless the Society is prepared to furnish satisfactory evidence of the income of its members at six-monthly intervals. Inability to give this undertaking would compel the Medical Association to withdraw its recognition of the Society.'

With Council's permission, Dr. du Toit withdrew his proposal, and Dr. Heymann's amendment became the substantive motion and, on being put to the vote, was *Carried Nem. Con.*

*Council Noted* that the Society had agreed to abolish Associate Membership.

It was reported that the Society had asked the Association to comment on the question of the admission of members earning over £2,500 per annum who would be liable for the payment of customary fees for private practice. *Council Noted* that the Committee was not prepared to make any recommendation, and after discussion it was proposed by Dr. Chapman, seconded by Mr. Wolfowitz and *Resolved* that this type of membership could not be accepted.

57. *General Motors Sickness and Accident Fund:* It was stated that at the previous meeting of Council the recommendation of the Committee that this Fund be approved had been referred back for further consideration. The Cape Midlands Branch had advised that the Fund was controlled from the United States of America under arrangements entered into by the General Motors Corporation with an insurance company, and that the Branch approved of the Fund. The Committee accordingly recommended again that in the special circumstances the Fund be approved as long as the Corporation's policy was directed from the United States of America. *Council Agreed.*

58. *New Applications:* The Committee submitted the following applications for approval:

(a) Escom (Natal Central Undertaking) Medical Benefit Society: The Committee recommended approval, and *Council Agreed.*

(b) Onderlinge Mediese Hulpvereniging van 1954: It was reported that although this Society had stated that it accepted the Rules for Medical Aid Societies, it was open to individuals as well as firms and made provision for persons earning over £2,500 per annum to be members, who would pay increased subscriptions and be liable for the customary fees for private practice. The Committee pointed out that in the circumstances it was not able to recommend approval and had agreed to leave the decision to Council.

It was proposed by Dr. Schaffer, seconded by Dr. Schneider and *Resolved* that recognition be deferred in order to obtain further information.

(c) Polliack Group Medical Aid Society: The Committee recommended approval, and *Council Agreed.*

(d) S.A. Liberal Insurance Co. Ltd. Staff Medical Aid Fund: The Committee recommended approval. *Council Agreed* to the acceptance of this Fund, on condition that the Fund agreed to exclude members earning more than £2,500 per annum.

#### 59. Medical Aid Societies Removed from the List:

(a) East London Municipal Employees' Medical Aid Society, the members of the Society having joined the S.A.A.M.E. Medical Aid Fund: *Council Agreed.*

(b) J. H. Vivian & Co. Ltd. Medical Aid Society, this Society having been incorporated by the Northern Medical Aid Society: *Council Agreed.*

60. *Capitation and Not Membership Fees to Apply to Benefit Societies where Membership Is Not Obligatory on All Employees:* It was reported that the East Rand Branch had submitted a resolution that the Association should state as policy that where membership of a Benefit Society was not obligatory on all employees of an industry or trade, capitation and not membership fees should apply. The Committee reported that it could not support this resolution. *Council Agreed* that the resolution be not supported.

61. *Increase in the Income Ceiling of Members of Medical Benefit Societies:* The Southern Transvaal Branch had submitted the view held by Benefit Societies that the figure of £600 per annum (basic) as an income ceiling for members of Benefit Societies was

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too low when the increased cost of living was taken into account. The Committee's recommendation was that the figure should remain at £600 per annum at present. *Council Agreed.*

62. *Size of Panels for Thoracic Surgeons:* It was reported that the Mines Benefit Society had intended appointing one thoracic surgeon for 41,000 members. The Southern Transvaal Branch had suggested that the rule limiting panels to 10,000 members should be reviewed as far as certain specialities were concerned. The Committee had been informed that the thoracic surgeons had decided to abide by the policy of the Association and therefore recommended to Council that the Association should maintain its present view that panels for specialities should not exceed 10,000 members.

It was proposed by Dr. Peskin, seconded by Dr. Gluckman, that the recommendation of the Committee should not be accepted. On being put to the vote, this was *Lost*. The recommendation of the Committee was then put to the vote and *Carried*.

63. *Sasol Medical Aid Society:* The Sasol Medical Aid Society desired to incorporate employees of Sasolburg Municipality who were all ex-employees of Sasol and did not wish to leave the Fund. This was supported by the Vereeniging Division and the Southern Transvaal Branch, who, however, pointed out that it was not to be regarded as a precedent. The Committee recommended to Council that the request be only acceded to by a special resolution in view of the new rule regarding incorporation of outside members, adopted at a previous meeting of Council. *Council Agreed.*

#### TARIFF OF FEES

##### 64. *Tariff of Fees:*

(a) *Bilateral Operations:* The Southern Transvaal Branch, supported by the Association of Surgeons of South Africa, had referred a request that the fees for operations for bilateral inguinal herniae and bilateral Trendelenburg operations with multiple ligations and stripping, should be the full fee for both sides done at one session. The Committee recommended that this request be acceded to in the case of a Trendelenburg operation on account of the time-consuming nature of the operation, but not in the case of the operation for herniae.

It was proposed by Dr. Grant-Whyte, seconded by Mr. Wolfowitz and *Resolved* that the position be left as it was for all operations, namely, the tariff fee for one side plus 50% of the fee for the other side.

(b) *Dental Anaesthesia:* The Committee recommended to Council that its ruling that the fees for dental anaesthetics, as listed in the Tariff, should not be subject to reduction for general practitioners, be confirmed. *Council Agreed.*

(c) *Fees for Radiotherapy:* It was stated that fees for this form of treatment were subject to arrangement between radiologists and Medical Aid Societies in each case. The Radiological Society had now proposed a tariff for acceptance by Medical Aid Societies. The Committee recommended to Council that this schedule should be submitted to Medical Aid Societies for acceptance and for its inclusion in the Tariff book. It was pointed out that no maximum fees had been laid down as for other items in the Tariff book.

After certain members had criticised the amount of some of the fees, the Chairman of the Committee, Dr. Vercueil, proposed that the fees in question should be discussed with the radiologists when a sub-committee met them in connection with the fees for Neuro-surgical procedures. *Council Agreed* to this proposal.

(d) *Revision of Fees for Visits and Consultations:* It was reported that the National General Practitioners' Group had requested that fees for visits and consultations be revised on a geographical basis and that machinery for determining fees in each area be devised by the Branch with the consent of Federal Council. The Committee recommended that on some future occasion the principle of determining fees on a geographical basis should be discussed by Federal Council. The Committee had further agreed to recommend to Council that as an increase in the fees for general practitioners was due, Medical Aid Societies should be asked to raise their fees as follows:

	Visits	Consultations
Johannesburg .. ..	17/6	15/-
Rest of Union .. ..	15/-	12/6

Discussion ensued as to whether it was reasonable to alter these fees at this stage, or whether it should await a general revision of

the Tariff book. On being put to the vote, the recommendation of the Committee was *Carried*.

65. *New Rule:* It was reported that the General Practitioners' Group had submitted a resolution to the Committee that recognition should not be granted to Medical Benefit or Medical Aid Societies which under their Constitutions permitted payments for services to unregistered practitioners or auxiliaries, and that where such approval already existed it should be withdrawn. It was stated that the Committee could not accept this whole proposal but recommended to Council that new Societies applying for recognition should not be approved if they permitted payment for services to unregistered practitioners or auxiliaries. *Council Disagreed* with this recommendation.

The Committee further recommended to Council that a ruling be obtained from the S.A. Medical and Dental Council as to whether it was unethical for a medical practitioner to be associated with a Society which made provision for payment to unregistered persons. *Council Agreed.*

66. *Fees for Refraction Tests:* It was reported that the Ophthalmological Society had made representations to the Committee that Medical Aid Societies should accept refractions as part of an ophthalmic surgeon's services to patients. It was stated that a number of Societies did not include refractions in the benefits to their members, and it was held that errors of refraction and their correction were part of an overall medical service and should be recognised as such. The Committee recommended to Council that Medical Aid Societies should be informed that when a patient was referred by a general practitioner to an ophthalmologist, the account of the ophthalmologist should be honoured by the Society.

It was proposed by Dr. J. S. du Toit, seconded by Dr. Young and *Resolved* that the word 'medical' should be substituted for the word 'general' before 'practitioner'.

*Council Agreed* to the recommendation of the Committee as amended.

67. *Average Income for Members of Medical Aid Societies:* The Committee had considered the question of the gradual consolidation of cost-of-living allowances into basic salaries and felt that a stage had been reached when Societies could no longer conform to an average of £700 per annum basic salary. It therefore recommended to Council that the average income for members of Medical Aid Societies be increased to £850 per annum (basic).

Dr. Alexander suggested that the words 'where consolidation has taken place' be added after the words '£850 per annum (basic)'. *Council Agreed.*

It was proposed by Dr. Schaffer, seconded by Dr. J. S. du Toit and *Resolved* that the recommendation of the Committee, as amended, be accepted.

68. *Income Ceiling for Members of Medical Aid Societies:* A request had been made by the Southern Transvaal Branch that the rule of the Association with regard to the income ceiling for members of Medical Aid Societies be altered to £2,000 per annum gross. The Committee recommended to Council that the income ceiling of £2,500 per annum (basic) should remain as it stood.

After discussion, it was proposed by Dr. Chapman, seconded by Dr. Peskin and *Resolved* that the word 'basic' be changed to 'gross' in the Committee's recommendation.

On being put to the vote, the Committee's recommendation as amended was *Carried*.

69. *Negotiations by Councils of Medical Aid Societies:* The Committee recommended to Council that its ruling be confirmed that 'While Councils of Medical Aid Societies were recognised for purposes of negotiation on matters of principle or for the approval of new Societies, the Councils should be advised that complaints with regard to fees must be referred by the Medical Aid Society concerned itself to the Branch of the Association or to the Head Office'. *Council Agreed.*

Dr. Vercueil then moved the adoption of the Report of the Committee as a whole, with amendments. *Council Agreed.*

70. *'Farming Out' of Full-time Health Officers:* Referring to Minute 26 above, Dr. de Villiers reported that he had enquired into this matter and felt that the obvious line of action would be to refer the whole matter to the United Municipal Executive Committee for attention. He moved accordingly, seconded by Dr. Collins. *Council Agreed.*

71. *Report of Federal Ethical Committee:* The Secretary stated that no ethical cases had been dealt with. *Noted.*



### Report of Head Office and Journal Committee

72. *Minutes of Committee Meetings:* Dr. Sichel presented the Report, stating that there had been two ordinary meetings and one special meeting of the Committee since the last meeting of Council. The average attendance had been 11 members. Minutes of the meetings had been sent to all members of Council so that they could be kept fully informed. *Noted.*

73. *S.A. Journal of Laboratory and Clinical Medicine:* It was reported that the last number of the 'S.A. Journal of Clinical Science' had appeared in December 1954, and the first number of the new journal was due to appear in March. An Editorial Board had been appointed and the Committee anticipated that the journal would be well received and achieve a wide reputation. *Noted.*

74. *'History of Medicine in South Africa':* It was reported that although the work in producing this book had not yet been completed, it was well in hand and should be with the printers later in the year. *Noted.*

75. *Appointment of Official in the Transvaal:* It was stated that in accordance with the direction of Council, advertisements had been placed in the leading daily newspapers and in the *Journal*. A number of applications had been received and these had been referred to the Augmented Executive Committee in the Transvaal in order that the choice of a suitable person might be recommended to the Head Office and Journal Committee for an appointment to be made. On the recommendation of the Augmented Executive Committee, the Head Office and Journal Committee had agreed to recommend to Council that Mr. O. W. Johns be appointed to act in a part-time capacity at £1,200 per annum fixed and inclusive. The Executive Committee had added its recommendation. *Council Agreed Nem. Con.* that Mr. Johns should be asked to commence duty on or after 1 April 1955, on the terms mentioned above.

76. *Staff Bonus:* In view of the financial position of the Association as at 31 December 1954, the Committee had agreed to set aside the sum of £500 to be divided amongst the staff in the form of a bonus. *Noted.*

77. *Price of Paper:* As the Committee had received information that the price of paper would increase in March and that a further increase could be expected in June, it had agreed that the order for the paper for the production of the *Journal* during 1956 should be placed now in order to benefit by the lower price. It was estimated that there would be a saving of approximately £400 by this action. *Noted.*

78. *Appointment of Assistant Editor:* It was stated that with the growing amount of work in the Editorial Department, the Committee would consider whether it would be necessary to fill the vacant post of Assistant Editor. *Noted.*

Dr. Sichel then moved the adoption of the Report as a whole. *Council Agreed.*

### THE BENEVOLENT FUND

#### Report of Management Committee of Benevolent Fund

79. *Renewal of Grants for 1955:* Dr. Sichel reported that there had been one meeting of the Management Committee of the Benevolent Fund since the last meeting of Council. Twelve members had been present. The renewal of grants for 1955 had been considered and the Executive Committee had agreed to these as follows:

Cape Eastern Branch: Mrs. L.A., £120 per annum; Mrs. P.A., £180 per annum.

Cape Western Branch: Mrs. O.G.F., £120 per annum; Mrs. J.R.M., £120 per annum.

Natal Coastal Branch: Mrs. E.M.H., £150 per annum; Dr. G.K.M., £120 per annum; Mrs. A.M.P., £120 per annum; Mrs. K.R., £120 per annum; Mrs. H.S.W.-R., £120 per annum.

Natal Inland Branch: Dr. S.F.H.E., £120 per annum.

Northern Transvaal Branch: Mr. P.E.W., £50 per annum; O.F.S. & Basutoland Branch: Mrs. M.A.L., £120 per annum; Mrs. B.R., £120 per annum.

Southern Transvaal Branch: Mrs. M.J.B., £120 per annum; Mrs. E.C., £120 per annum (non-member); Mrs. M.R.D., £120 per annum; Mrs. M.G.M., £120 per annum; Mrs. A.M., £120 per annum; Mrs. M.A.P., £120 per annum; Mrs. S.R., £60 per annum (non-member).

Royal Medical Benevolent Fund: Mrs. F.W., £60 per annum. Officers' Association, British Legion: Mrs. D.M.G.F., 26 guineas per annum.

*Council Confirmed* the action of the Executive Committee.

80. *New Grants:* The Committee recommended to Council that two new grants be made as from 1 February 1955, i.e., Mrs. M.S.S. £120 per annum, and Dr. T.H.T.B. £120 per annum (Southern Transvaal Branch). *Council Agreed.*

81. *New Application Forms:* In accordance with a request from the Southern Transvaal Branch, a new form of application had been prepared which included 'Notes for the Guidance of Branch Secretaries'. These forms had been printed in English and Afrikaans and were available for use. *Noted.*

Dr. Sichel then moved the adoption of his Report. *Council Agreed.*

### Notice of Motion

82. *Amendment of By-Law 58:* Notice of Motion to amend By-Law 58 was given over the names of Dr. M. Shapiro and Dr. M. Peskin. It was proposed that the By-Law be amended by the deletion of all words following the words 'Journal and Head Office' and by the substitution of the words: 'Provided that the Committee shall not incur any extraordinary expenditure or determine or vary the salary scales, remuneration or allowances of any permanent official, or appoint or terminate the services of any official whose remuneration exceeds the sum of £1,000 per annum, or mortgage, sell or purchase any immovable property on behalf of the Association without the prior consent of the Federal Council or of the Executive Committee in emergency.' *Noted.*

### HONOURS

#### Honours

83. *Nomination for Association's Gold Medal:* The Secretary stated that he had received a nomination for the award of the Association's Gold Medal. This was contained in a sealed envelope, which was then opened. The name was read and the Chairman announced that a ballot vote would be taken at the next meeting of Council. *Noted.*

84. *Award of the Association's Gold Medal:* The Chairman moved the suspension of the Rules governing the award of the Gold Medal. He stated that it had been suggested that the Medal be awarded to Dr. Karl Bremer, but unfortunately Dr. Bremer had died before the procedure could be carried out. *Council Agreed* to the suspension of the Rules.

Dr. Sichel then proposed, seconded by Dr. J. S. du Toit, 'That this Council resolves that the Gold Medal of the Association be awarded posthumously to Dr. Karl Bremer'.

In accordance with normal procedure, a ballot vote was taken. Drs. Marchand and McMurray acting as scrutineers. Following the ballot count, the Chairman announced that the award had been made unanimously. This intimation was received with *Acclamation*.

85. *Award of Association's Bronze Medal:* The Secretary submitted a recommendation from the Cape Western Branch that Dr. D. P. Marais be awarded the Association's Bronze Medal. He read the citation which the Branch had supplied.

A ballot vote was taken and it was announced that *Council Agreed Unanimously* to the award being made. *Acclamation.*

86. *Emeritus Membership:* The Secretary submitted a letter from the Southern Transvaal Branch recommending that Dr. J. H. Harvey Pirie be made an Emeritus Member of the Association. *Council Agreed Unanimously Amid Acclamation.*

Dr. Pirie, who had been absent during discussion of this matter, was recalled to the meeting. In thanking the Council for the honour which had been bestowed on him, he stated that he had received another honour during the year as he had been made an honorary member of the British Medical Association, having been a member of that Association for 50 years. This information was noted with *Acclamation*.

87. *Honorary Life Membership:* The Secretary submitted a recommendation from the Southern Transvaal Branch that Dr. M. Bleiden be made an Honorary Life Member of the Association. *Council Agreed* to this recommendation.

88. *Honours for Certain Members of S.A. Medical and Dental Council:* The Secretary submitted a letter from the Northern Transvaal Branch recommending that certain members of the S.A. Medical and Dental Council be honoured at the next Congress to be held in Pretoria during October 1955. Citations were submitted and read, and a ballot vote was taken. It was announced that *Council Agreed* that the Association's Bronze Medal be

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awarded to Prof. S. F. Oosthuizen, President of the Council, and Prof. L. J. te Groen, Honorary Treasurer of the Council, both of whom had given sterling service to the profession both through the Association and the Council.

A citation was also read concerning the work of Dr. R. V. Bird, the Vice-President of the Council and a member of the dental profession. *Council Agreed* that Dr. Bird be made an Honorary Member of the Association.

A further citation was read concerning Miss C. A. Nothard, R.R.C., the President of the S.A. Nursing Council and a member of the Medical Council representing the nursing profession. *Council Agreed* that Miss Nothard be made an Honorary Member of the Association.

89. *Report of Augmented Executive Committee in the Cape:* Dr. Sichel reported that two meetings of the Liaison Committee with the Provincial Administration had been held since the last meeting of Council. The chief items discussed were the question of radiological services, the admission of patients to the Groote Schuur Hospital and the creation of full-time posts at Provincial hospitals. Appropriate recommendations had been made in each case. In the latter case full-time appointments had only been made in a few Provincial hospitals in comparatively junior posts where the local practitioners had refused to undertake the work involved. He pointed out that these appointments were bound up to some extent with the shortage of interns which was being increasingly felt throughout the Union. It had been stated at the meeting held last November that the Hospitals Department had no knowledge of the existence of a new Draft Hospitals Ordinance which, rumour had it, was being dealt with by the legal advisers of the Administration at the present time. *Noted.*

*Council Noted* that Dr. J. D. Joubert had been re-elected as one of the three representatives of the Medical Association on the Central Hospitals Advisory Committee.

*Council Confirmed* the replacement on the Augmented Executive Committee for the Cape of Dr. J. D. Joubert and Dr. P. Jabkowitz by Dr. I. R. Ross and Dr. L. E. Lane, respectively.

Dr. Sichel then moved the adoption of his Report. *Council Agreed.*

90. *Report of Augmented Executive Committee in Natal:* Dr. Grant-Whyte stated that there was nothing to report from his Province. *Noted.*

91. *Report of Augmented Executive Committee in the Orange Free State:* Dr. Theron stated that there was nothing to report from his Province. *Noted.*

92. *S.A. Medical Congress, Pretoria, 1955:* Dr. Waks reported that certain information had already appeared in the *Journal*. The intention was that the two Plenary Sessions would be devoted to Cancer, and an effort would be made to bring out eminent people associated with this subject. He was sure that the National Cancer Association would support the Congress in this regard. *Noted.*

#### *Matters Referred to or by S.A. Medical and Dental Council*

93. *New Ethical Rule:* A letter from the Registrar of the S.A. Medical and Dental Council was submitted, in which the Association was asked to express an opinion on the desirability or otherwise of medical practitioners having consulting rooms in nursing homes. The Secretary stated that the matter had been referred to Branches and the opinions of a number of Branches had been received. These were read.

After discussion, it was proposed by Dr. Shapiro, seconded by Mr. Wolfowitz and *Resolved* 'That in general it is undesirable for medical practitioners to have consulting rooms in nursing homes or hospitals'.

94. *Collection of Pathological Specimens:* A letter from the S.A. Medical and Dental Council was submitted, in which the Association was asked to express an opinion as to the desirability of private pathologists having collection boxes for specimens in nursing homes and hospitals. The Secretary stated that the Executive Committee had agreed to recommend to Council that this practice should be allowed in respect of hospitals and nursing homes only, provided that the same facilities are granted to all pathologists in the area and that they are all notified whenever and wherever such a practice is commenced by one of their number.

After short discussion, *Council Agreed* to the recommendation of the Executive Committee.

#### *Matters Referred to or by Branches*

95. *Groups Within the Association:* A resolution from the Northern Transvaal Branch was submitted, reading: 'That Federal Council be urged to investigate the whole question of Groups and their functions within the Association.'

The Secretary stated that the Executive Committee had agreed to recommend to Council that a sub-committee be appointed to go into this matter. *Council Agreed* to the recommendation of the Executive Committee. It was proposed by Dr. Heyman and generally *Agreed* that the sub-committee should consist of three members, namely Drs. Waks, Ziady and J. G. A. du Toit.

#### *Matters Referred to or by World Medical Association*

96. *Ninth General Assembly of World Medical Association, Vienna, 1955:* A request from the World Medical Association for the appointment of a representative to attend the meeting was submitted. The Secretary stated that the Executive Committee had agreed to recommend to Council that Dr. A. I. Goldberg, of Cape Town, be the Association's representative. *Council Agreed.*

#### *Any Other Business*

97. *Unemployment Benefit Insurance Medical Certificates:* The Secretary read a letter from the Natal Inland Branch, in which objections were raised to the system now in force regarding the provision of medical certificates for Unemployment Benefit Insurance. *Council Agreed* that the matter be referred to the Parliamentary Committee.

98. *Representation on Committees of National Cancer Association:* A letter from the National Cancer Association was submitted, in which the Association was requested to appoint a representative to serve on the Research Committee and the Cancer Control Committee.

*Council Agreed* that the matter be taken as urgent. After short discussion, it was *Agreed* that Dr. Gluckman be nominated to serve on the Research Committee and that Dr. Schneider be nominated to serve on the Cancer Control Committee.

99. *Notice of Motion—Mode of Election of Federal Council:* A Notice of Motion over the names of Dr. B. A. Armitage and Dr. A. L. Young, was handed in, reading: 'That in view of the fact that the mode of election of members of Federal Council, as set out in By-Law 35(b), does not strictly constitute a secret ballot, paragraph 1 of By-Law 35(b) be amended as follows:

"As stated in By-Law 34(a), every member of a Branch shall receive a numbered ballot paper enclosed in a plain envelope which in turn shall be enclosed in a second envelope bearing the number of the ballot paper. The completed ballot paper must be placed in the plain envelope which in turn must be sealed and placed in the numbered envelope. This latter must then be signed by the member and returned to the Secretary of the Branch not later than 15 days from the date of issue, this fifteenth day to be the date set for the election. On that date the Secretary shall open the signed and numbered envelopes and hand the contained plain envelopes to two members nominated by the Branch Council to act as scrutineers, who shall open the plain envelopes containing the ballot papers and make a return to the Branch Council containing details of the votes recorded.'" *Noted.*

100. *Accounts Rendered to Medical Aid Societies:* Notice of Motion was given over the names of Mr. J. Wolfowitz and Dr. M. Peskin, reading: 'That all medical fees charged under the Tariff of Fees for Approved Medical Aid Societies shall be guaranteed and paid in full by the Medical Aid Society irrespective of whether the patient has exceeded the limit of his benefits or not.'

An addendum was proposed by Dr. Alexander, seconded by Mr. Wolfowitz, that Medical Aid Societies should be responsible for the accounts of members, should they resign, if the services charged for were rendered while they were members.

*Council Agreed* that these resolutions should be referred to the Central Committee for Contract Practice for attention and report at the next meeting of Council.

101. *Conference Convened by S.A. Medical and Dental Council:* The Chairman asked Dr. Struthers to give a short report on what had taken place at the conference. Dr. Struthers replied briefly, stating that a full report of the proceedings would be sent by the Council to all bodies represented at the conference. He proposed that this report should be circulated to all members of Federal

Council when it was received and that Council members be asked to comment. *Council Agreed.*

Council accorded a vote of thanks to Drs. Shapiro and Struthers for their presentation of the Association's case at the conference.

102. *Date and Place of Next Meeting of Council:* A the suggestion of Dr. Struthers, *Council Agreed* that the next meeting would take place in Pretoria on 13, 14 and 15 October 1955.

103. *Chairman's Remarks:* The Chairman stated that he was grateful to members for their co-operation. He hoped that visitors to the Cape had enjoyed their stay, and on behalf of the Council he moved that a vote of thanks be accorded to the Red Cross Society for the facilities which they had afforded, and to Dr.

Purcell and the Civil Service Club for the gesture that had been made regarding honorary membership of the Club for visiting members. He also thanked Dr. Purcell for having made the arrangements with regard to a dinner for members of Federal Council and the S.A. Medical and Dental Council which was to take place that evening.

The votes of thanks were *Accorded With Acclamation.*

104. *Thanks to the Chairman:* Dr. Radloff moved a vote of thanks to the Chairman for the able way in which he had presided over the meeting. This was *Accorded With Acclamation.*

The meeting ended at 5.55 p.m.

## CONSTITUTION OF THE NATIONAL GENERAL PRACTITIONERS' GROUP

The Steering Committee of the National General Practitioners Group has forwarded for publication the following revised copy of the revised Constitution of the Group as approved by Federal Council at its meeting in October 1954:

### I.—Name.

The name of the Group shall be 'The National Group of General Practitioners of the Medical Association of South Africa'.

### II.—Objects.

2. The objects for which the Group is established are:

- To promote General Practice.
- To define and establish relations amongst General Practitioners and all Groups of the Medical Association and between General Practitioners and hospitals, public and private institutions, government authorities, the medical profession generally and the public.
- To promote the professional and legitimate interests of General Practitioners.

### III.—Membership.

3. Any person who is a registered medical practitioner within the Union of South Africa and who is a member of the Medical Association of South Africa is eligible for membership by virtue of his membership of his branch or section, where such branch or section exists, and providing:

- His professional practice is confined to General Practice.
- The nature of his practice is such as to give him a special interest in the subject of General Practice.

4. Every member shall remain a member until his membership is terminated either by his resignation in writing addressed to the Honorary Secretary-Treasurer or by decision of the Executive Committee of the Group. His membership may be suspended if after one year he has not paid his due subscription, but he may be reinstated on payment of arrear subscriptions due. During the period of suspension he shall not retain his vote.

5. The activities of the Group shall be suspended if, at any time, its membership shall be less than 11 (eleven) members.

### IV.—Control.

6. The general control and direction of the policy and affairs of the Group shall be vested in the National Committee of the Group and its Executive Committee.

7. The National Committee shall be elected by branches or sections, each branch having 1 (one) member for the first 50 (fifty) and thereafter 1 (one) member for every additional 100 (hundred) or the major portion thereof.

- The office bearers and Executive shall be elected by the National Committee out of their members and shall consist of a Chairman, two Vice-Chairmen, an Honorary Secretary/treasurer, and five members of the Executive.
- The Executive or any sub-committee of the National Committee may co-opt any member or members of the group for any special purpose, the co-opted member to be without voting powers.
- The National Committee shall meet at least twice a year.
- Provision shall be made for proxies with approval of the branches or section.

8. A list of office bearers, together with a complete list of

members of the Group shall be furnished annually to the Medical Secretary of the Association within 30 (thirty) days of the election of such office-bearers.

9. The Honorary Secretary/Treasurer of the Group shall keep records of all meetings of the Group and of the Executive Committee and shall conduct all correspondence in connection with the affairs of the Group. He shall receive all monies due to the Group and shall make all disbursements authorized by the Executive Committee.

### V.—Meetings.

10. The Annual General Meeting shall be held once a year at or about the time of the Annual General Meeting of the Medical Association. The quorum shall consist of 20 (twenty) members inclusive of proxies.

11. General Meetings of the Group may be held from time to time and shall be called by the Executive Committee on the written request of 40 (forty) members of the Group. Voting by proxy shall follow as nearly as is material the form prescribed in the By-Laws of the Association.

### VI.—Action.

12. The Group may take such action as may be deemed necessary in all matters affecting the legitimate interests of its members; provided that the Association as a whole be not involved or pledged to any action and that any action contemplated by the Group be in conformity with the policy of the Association for the time being in force.

13. Should the Group refer a matter affecting the interest of its members to the Federal Council of the Association for action, it shall take no further independent action unless requested to do so by Federal Council.

### VII.—Organization.

14. Shall consist of the National Group with branches which follow closely on the pattern established in the Medical Association of South Africa. The branches may divide themselves further into sections. Such branches may be allowed powers of independent action in local matters provided that such action is not in conflict with the General Policy and rules of the Group, and of the Association in general.

15. The method of election in each branch shall be left to the discretion of the Executive Committee of the branch or section that each branch shall elect. Such branch or section shall elect a Chairman, an Honorary Secretary/Treasurer, and an Executive Committee consisting of six or more members annually at the Annual General Meeting of the branch or section, which shall be held three months prior to the Annual General Meeting of the Group.

16. Reports of local action taken shall be submitted within 14 (fourteen) days by the Honorary Secretary/Treasurer of the branch or section to the Honorary Secretary/Treasurer of the Group.

17. That each branch or section may draw up their own By-Laws for the conduct of their local affairs including the method of election of delegates to the National Committee. Nothing in these By-Laws shall be in conflict with the Constitution of the National Group.

## VIII.—Subscriptions.

18. An Annual Subscription of £1 0s. 0d. shall be payable by members of the Group to provide funds for the carrying out of the work of the Group.

19. It shall be competent for the amount of this subscription to be altered by majority vote at the Annual General Meeting of the Group.

20. The subscriptions shall be collected by the Honorary Secretary/Treasurer of the National Group. All accounts shall be subject to audit and branches or sections may claim legitimate

expenses in the connection with the running of their branch, these not to exceed 50% of the paid up subscriptions of their members for that year.

## IX.—Annual Report.

The Honorary Secretary/Treasurer shall submit an Annual Report and a Financial Statement at the Annual General Meeting of the Group. A copy of each shall thereafter be sent to the Medical Secretary of the Association within 30 (thirty) days of the meeting of the Federal Council of the Association.

## POSTGRADUATE MEDICAL EDUCATION

The American Medical Association announces that during a recent period of 2½ years its Council on Medical Education and Hospitals has been engaged in a comprehensive survey of postgraduate medical education in the United States. The use of the term postgraduate education has come to be distinguished from graduate medical education as follows:

*Graduate education* includes relatively long periods of training such as internships, residencies, fellowships and formal academic work, which lead either to specialty status or an advanced academic degree.

*Postgraduate education* refers to somewhat broader periods of study of perhaps a few days to a few months and which are designed to refresh a practitioner in his own field of practice or extend his knowledge of one particular element of it.

The survey of postgraduate facilities has included field visitations to most of the 300 or more institutions and organizations in the USA offering postgraduate courses.

A preliminary report of the findings of the survey was pre-

sented at the 50th Annual Congress on Medical Education and Licensure a year ago. Since then, the material collected during the study has been worked up into a final report. This will be published during 1955 as a series of special articles in forthcoming issues of the *Journal of the American Medical Association* as follows:

26 February—The Scope and Extent of Postgraduate Medical Education in the United States. 12 March—The Physician as a Lifelong Student. 26 March—The Objectives and Content of Postgraduate Medical Education. 9 April—Educational Methods in Postgraduate Teaching. 23 April—Time and Place Arrangements of Postgraduate Courses for Practising Physicians. 7 May—Sponsorship and Administration of Postgraduate Medical Education. 21 May—Financing Postgraduate Medical Education. 4 June—The Future of Postgraduate Medical Education.

After the Journal publication of the last of these articles, the entire series will be reprinted in monograph form, to which will be added a section on the 'History of Postgraduate Medical Education' and a number of appendices containing additional detailed material derived from the survey.

## VACCINATION AGAINST PARALYTIC POLIOMYELITIS: PERFORMANCE AND PROSPECTS

## ABSTRACT OF A PAPER BY DR. JONAS E. SALK OF THE VIRUS RESEARCH LABORATORY, SCHOOL OF MEDICINE, UNIVERSITY OF PITTSBURGH

The paper of which the following is an abstract was presented by Dr. Salk at the conference held at the University of Michigan on 12 April 1955. It was accompanied by many charts illustrating the results of experiments. The paper had been prepared without prior knowledge of Dr. Frances' report on the 1954 Poliomyelitis Vaccine Field Test.

Dr. Salk said that with killed-virus preparations the destruction of infectivity and the reaction of immunological response were governed by definable laws. The destruction of infectivity with formaldehyde proceeds as does a first-order chemical process, and the time required can be predicted rather precisely. In the production of the vaccine the antibody-producing power is not measurably reduced unless over-treatment is extended for a period more than 5 times that required to reduce infectivity to a point at which it is no longer measurable. This is an ample margin of safety. Moreover the vaccine is so stable that no special precautions are required for its maintenance.

The amount of killed-virus polio vaccine required to produce immune response in man is far less than might have been anticipated from comparison with most other microbial antigens; and it is much easier to produce immune response in man than in the monkey, and in the monkey than in the mouse. Moreover the antibody persists much longer in man than in monkey or mouse.

The optimum immunological response to two injections of the killed-vaccine is obtained in the monkey if they are separated by an interval of 4 weeks. In the mouse the optimum interval is much shorter; in man it is much longer (months rather than weeks). These facts were known before the 1954 Field Test, but there was not time to put them in practice, and the test was therefore of the question whether *primary vaccination alone* could prevent paralytic poliomyelitis rather than of the effectiveness of *full immunization*, which could have been achieved only if the course

of inoculations had been extended over a number of months at least.

It has been shown that if merthiolate is added to the vaccine to inhibit bacterial or mould contamination its antigenic property steadily declines over a period of months. The effect of merthiolate is more rapid at a higher temperature, effecting almost complete destruction of antigenicity within a few days at 37° C; but under certain circumstances rapid deterioration has been observed even at refrigerator temperatures. The effect is quickest in the type-I component, next for type II, and last for type III. Certain of the vaccine used in the Field Test was merthiolated, and tests of the effects on children of a number of lots of vaccine used in the Field Test have shown substantial reduction of immunizing power in certain lots. This is largely attributed to the merthiolate, but also, perhaps, to variation in the starting material.

It has been shown (1955) that if versene is added to the polio vaccine in addition to 1 : 10,000 merthiolate the destructive effect of the merthiolate is prevented while its antiseptic or preservative qualities are retained. The solution of the merthiolate problem by the addition of versene is the result of the efforts of the Research Staff at Eli Lilly and Company. Other laboratories similarly engaged in vaccine production are solving the preservative problem in a number of ways, either by not using it at all, as is the case at the Connaught Research Laboratories, in Canada, and in certain European laboratories, or by the use of other chemicals that can be shown to exercise the necessary anti-microbial effect without impairing antigenic activity.

As the result of experience polio vaccine is being prepared in 1955 of greater potency than the vaccines used in 1954.

Dr. Salk again emphasized that the 2nd ('booster') dose of polio vaccine should not be given until at least 7 months after the 1st dose of vaccine, if the maximum effect is to be obtained.



'The antibody induced in the course of primary immunization is not evanescent . . . When a single dose of vaccine is given after the lapse of a sufficient period of time, the antibody induced thereby reaches extraordinarily high levels.'

Although the level of antibody in the blood following a primary vaccination is lower than the level in (unvaccinated) persons who have suffered an attack of paralytic poliomyelitis, the level following the 2nd (or 'booster') dose at a suitable interval is actually higher than in such paralytic convalescents. There is, however, a similarity between the levels of antibody following a booster injection and the levels produced in previously vaccinated persons by a polio infection.

Following a booster dose of vaccine the rise in serum antibody titre takes place between the 4th and 8th days after the inoculation, after which it remains steady at the raised level.

Dr. Salk proposed that for the year 1955 vaccine should be administered in 2 doses at an interval of 2-4 weeks, and that this

should be followed by a 3rd dose not earlier than 7 months later but before the 1956 polio season. Children who received the Field Test vaccines in 1954 should be given a booster dose in 1955. Moreover those in groups vaccinated with vaccines that performed poorly in the Test should receive 2 doses in 1955, followed by a 3rd dose in 1956.

'The question that cannot be answered until sufficient time has elapsed is how long will immunity last. Will it last only so long as antibody is present in the blood stream or might immunity be more persistent than that? It would appear from the observations here reported that if vaccination induces a long-lasting alteration in the state of reactivity of the immunologic mechanism, then subsequent contact with the poliomyelitis viruses under natural circumstances should cause antibody formation to begin sufficiently rapidly, and might be expected thereby to increase the likelihood that long-lasting immunity will follow the proper use of a properly constituted vaccine.'

## IN MEMORIAM

HUMPHREY RIVAZ RAIKES

*Professor J. M. Watt, F.R.C.P.Ed., University of the Witwatersrand, writes:* Dr. Raikes arrived in South Africa during 1928 to become



Dr. Raikes

the third principal of the University of the Witwatersrand at Johannesburg. Little did I realize then that I was meeting a person who was not only a giant in physical stature, but who was destined to become a giant in the academic affairs of the Union and of the Commonwealth. Since then we have seen strenuous times not only in the University but also in South Africa and the world in general.

Dr. Raikes has played no mean part in the development of the University of the Witwatersrand to its present status. Not only has the University benefited tremendously from his period of office as Principal and, from 1948, as Vice-Chancellor, but also South Africa and university education in general. He has left his mark on this University to such an extent that it can be regarded almost as a monument to him; and

for many years he was a valued participant in the counsels of university education in South Africa and within the Commonwealth.

Before coming to South Africa, Raikes had a distinguished academic and military career. A son of the Church, he was born in Kent in 1891, his father being Canon W. A. Raikes. After his schooling at Tonbridge and Dulwich, Raikes entered Balliol in 1910, where he had an outstanding academic career, graduating in due course in the Honours School of Natural Science in Chemistry, in which he obtained a first class. In 1910 he was Williams Exhibitioner and in 1911 Abbott Scholar. At the outbreak of the 1914-18 War, Raikes already held a commission in the Buffs (East Kents) and he served in France with his regiment. In 1915 he was wounded in action and on his recovery he transferred to the Royal Flying Corps. This gave him plenty of scope for his research inclinations and ingenuity of mind, for he was an important member of the original band of workers in Great Britain which evolved the early aerial bombs and bombing techniques. This carried him on into the Royal Air Force when it was formed and he was a member of the Air Mission to the United States of America in the later stages of World War I. For these services he was awarded the Air Force Cross.

After a period as Sub-Rector of Exeter College at Oxford,

Raikes was appointed Principal of the University of the Witwatersrand. Not long before his arrival the University had left Eloff Street. The campus at Milner Park, with its great stretches of waist-high grass, was graced with very few of its present buildings, and the Medical School on Hospital Hill consisted of an unfinished fragment of the final building. The students in the University numbered 1,500. From these beginnings the new Principal set out with the utmost vigour on a programme which has resulted in the great institution at Milner Park and Hospital Hill, with some 4,500 students in 1954.

Raikes always took a very special interest in medical and dental education and the Johannesburg Hospital. He long served on the Board of Management of the hospital and was for years its Vice-Chairman. Under his guidance many additions were made to the buildings and facilities of the Medical School. He showed an equal interest in the University's Oral and Dental Hospital, of which he was for many years Chairman of the Board of Management, when he was most helpful in the graduation of this institution from the Red Cross—St. John building to its first home next door. Subsequently, the necessities of railway expansion caused the disappearance of this building and the erection of the great structure which graces the south-east corner of the campus at a cost of about £350,000. Raikes again played a vital part in this venture.

Many honours came his way in recognition of his merit, industry and honesty of purpose. These include honorary degrees from the Universities of Bristol, Cambridge, Cape Town, Toronto and the Witwatersrand. I feel, however, that the greatest honour of all will prove to be the affection and regard of a long generation of students and of the many members of staff who have come to know him as a friend and a great man. Special credit is due to him for his immediate recognition of the magnitude of the task and duty which faced all universities at the end of World War II. This was to provide facilities for ex-servicemen, many of whom by age and by experience were much more mature than the average entry of undergraduates. The magnitude of this task can be gauged by the fact that at Wits, the number of students rose from 3,000 to 5,500 at the beginning of 1946. As a result ex-service graduates have for Raikes an affection all of their own, and those visiting the institution rarely missed calling on him.

Despite his long career of service, I cannot help feeling that it is by his personal characteristics that we shall remember him. He had a warm, affectionate nature which made him acutely sensitive to the needs of students and their welfare. His willingness to help fellow members of the staff and students alike was proverbial. Many were the occasions when he extended the hand of kindness—often giving material aid, and this frequently without anyone knowing about it. We shall miss his whimsical personality.

Now we have come to that inevitable parting which must overtake us all. We are sad that the parting has come so soon and that he has had such a short time to enjoy the leisure and retirement which he so richly deserved. He leaves behind him sweet memories and a great affection for a man who above all was a great humanist. *Vale!*

Following  
from Polio

Johannesbu  
Johannesbu  
Pretoria .  
Benoni .  
Randfonte  
Roodepoo  
Oberholze  
Rustenburg  
Springs .  
Boksburg  
Potgieters  
Waterberg  
Bethal Pu.  
Greylingst  
Middelbur  
Bronkhors  
Lichtenbur

Cape Town  
Cape Town  
Kokstad  
Stockenstr  
Port Elizab  
Worcester  
Kenhardt  
Knysna M  
Barkly Ea  
King Will  
Lusikisiki  
Bizana M  
Mount Ay  
Van Rhyr  
George D  
Uitenhage  
Caledon I  
Ceres Dis  
Walmer M

Pietermar  
Pietermar  
Durban  
Port Shep  
Verulam  
Queensbu  
Malvern  
Umgeni  
Uvongo I  
Ixopo .  
Pinetown  
Tonga  
Umlazi I

Bloemfont  
Excelsior  
Clocolan



## POLIOMYELITIS IN THE UNION

Following are the returns, supplied by the Union Department of Health, of cases notified under the Public Health Act as suffering from Poliomyelitis in the four weeks period from 1 to 28 April:

	Week Ending 7/4/55		Week Ending 14/4/55		Week Ending 21/4/55		Week Ending 28/4/55	
	European	Non-European	European	Non-European	European	Non-European	European	Non-European
<i>Transvaal</i>								
Johannesburg .. .. .	1		5	2	2		1	1
Johannesburg Pu. .. .			1					
Pretoria .. .. .		1	2					
Benoni .. .. .	1		2				1	
Randfontein .. .. .	1							
Roo-depoort-Maraisburg .. .				1				
Oberholzer Pu. .. .			1					
Rustenburg .. .. .					1	1		
Springs .. .. .					1			
Boksburg .. .. .					2			
Potgietersrust Mun. .. .					1			
Waterberg Dist. .. .						1		
Bethal Pu. .. .. .					1		1	
Greylingstad .. .. .						1		
Middelburg Dist. .. .							1	
Bronkhorstspuit .. .. .								1
Lichtenburg Dist. .. .							1	
Total .. .. .	3	1	11	3	8	3	5	2
<i>Cape Province</i>								
Cape Town Mun. .. .. .		2						
Cape Town D.C. .. .. .	1					1		1
Kokstad .. .. .		1						
Stockenroom D.C. .. .. .		1						
Port Elizabeth .. .. .		1						
Worcester .. .. .		1						
Kenhardt D.C. .. .. .	1							
Knysna Mun. .. .. .	1							
Barkly East, D.C. .. .. .			1					
King William's Town D.C. .. .						1		
Lusikisiki Mag. Dist. .. .						1		
Bizana Mag. Dist. .. .. .						1		
Mount Ayliff .. .. .						1		
Van Rhyndorp .. .. .					2			
George D.C. .. .. .						1		
Uitenhage D.C. .. .. .						1		
Caledon D.C. .. .. .								1
Ceres Dist. .. .. .							1	
Walmer Mun. .. .. .							1	
Total .. .. .	3	6	1		2	7	2	2
<i>Natal</i>								
Pietermaritzburg .. .. .		1						
Pietermaritzburg Dist. .. .	1							
Durban .. .. .		1			2		1	
Port Shepstone Dist. .. .		1						
Verulam .. .. .	1							
Queensburgh .. .. .			1					
Malvern .. .. .			1					
Umgeni Dist. .. .. .				1				
Uvongo .. .. .					1			
Ixopo .. .. .						1		
Pinetown Dist. .. .. .								1
Tongaat .. .. .								1
Umlazi Dist. .. .. .								1
Total .. .. .	2	3	2	1	3	1	1	3
<i>Orange Free State</i>								
Bloemfontein .. .. .							1	
Excelsior .. .. .							1	
Clocolan Dist. .. .. .								1
Total .. .. .							2	1

Total for Union for 4 weeks ending 28 April. Europeans 45. Non-Europeans 33

## CONGRESS NEWSLETTER : KONGRESNUUSBRIEF

*To all Members of the Association:*

It is a pleasure to report that Congress arrangements are well in hand, with every indication that there will be a bumper attendance.

Intention cards have been sent to all members of the Association, and already a few hundred have indicated that they will be attending Congress. As has already been stressed, accommodation in Pretoria will be limited in view of the Centenary Celebrations, which more or less coincide with the Congress.

To avoid disappointment and also to ease the work of the Organizing Committee, members intending to come are again urgently reminded to send in their intention cards, and to book their accommodation immediately with the South African Railways Tourist Bureau.

Every effort is being made to ensure that this Congress will be an outstanding success and, besides the formal entertainments provided, there will also be a Ladies' Tennis Tournament, a Ladies' Golf Championship and a Bowls Tournament.

The registration fee for Congress will be 2 guineas to all members of the Association. Interns will be very welcome to attend the scientific meetings, for which they will be charged a registration fee of 10s.

It is hoped to publish a newsletter in the *Journal* regarding the progress of Congress arrangements every two or three weeks.

The Draft Programme for Congress should be ready for publication and circulation towards the end of July.

C. M. Grundlingh and W. Waks  
*Hon. Organizing Secretaries*

*Aan Alle Lede van die Vereniging:*

Met genoeë kan meegedeel word dat die reëlins in verband met die Kongres goed vorder en dat 'n rekordbywoning verwaag kan word.

Aanduidingskaartjies is reeds aan alle lede van die Vereniging gestuur, en 'n paar honderd lede het alreeds te kenne gegee dat hulle die Kongres sal bywoon.

Soos reeds benadruk, sal losies en inwoning in Pretoria baie beperk wees met die oog op die Eeufeesviering wat saamval met die Kongres. Om teurstelling te vermy, asook om die werk van die Organiserende Komitee te vergemaklik, word lede wat van voorneme is om te kom weereens dringend daaraan herinner om hul aanduidingskaartjies sonder versuim in te stuur en om hul verblyf alhier dadelik te bespreek by die Toeriste-Buro van die Suid-Afrikaanse Spoorweë.

Geen moeite word ontsien om hierdie Kongres te laat slaag nie, en daar sal dan ook bo en behalwe die formele onthale, die volgende toernooie aangebied word, nl. 'n Damestennistoernooi, 'n Damesgolfkampioenskap asook 'n Rolbalwedstryd.

Die registrasiegeld vir lede van die Vereniging vir toelating tot die Kongres is 2 ghienies.

Interns word vriendelik uitgenooi na die wetenskaplike byeenkomste waarvoor inskrywingsgeld van 10s. deur hul betaalbaar is.

Die voorneme is om 'n nuusbrieff betreffende die vooruitgang van die Kongresreëlins, elke twee of drie weke in die *Joernaal* te publiseer.

Die konsepprogram vir die Kongres sal hopelik vir publikasie en sirkulasie teen die einde van Julie gereed wees.

C. M. Grundling en W. Waks  
*Organiserende Sekretarisse*

## MINISTER OF HEALTH DEFERS STATEMENT ON POLIOMYELITIS VACCINE

## FROM A PARLIAMENTARY CORRESPONDENT

The Minister of Health, Mr. J. F. Naude, has deferred for some weeks a statement he had intended making in Parliament following on the conference of experts which met in Cape Town on April 28 and 29 to consider the evaluation report on the field trials of Salk anti-poliomyelitis vaccine, carried out in the United States of America.

In reply to questions by Mr. J. F. W. Haak, M.P. for Bellville-Parow, Mr. Naude said in the House of Assembly last week (May 6) that he had intended making a statement on the recommendations of the committee of experts. But in view of the unfortunate occurrences recorded in connection with the use of vaccine produced by certain manufacturers in the United States,

he had decided to defer his statement until a report was received on the outcome of the investigations which were being undertaken by the public health authorities in America.

His information was that the report would take about three weeks to complete.

Among the questions put by Mr. Haak were: whether there was complete certainty that the vaccine was safe and effective; whether it was known for what period immunity would continue after inoculation; and whether further research was being carried out with a view to making the vaccine more effective.

These questions have fallen away through the Minister's statement being deferred.

## PASSING EVENTS : IN DIE VERBYGAAN

*Dr. and Mrs. J. M. Selkon* of Cape Town are leaving on 20 May to spend a holiday in England with their son, Dr. J. B. Selkon, who is Registrar in the Department of Pathology, Hammersmith Hospital, London, and is at present with the British Medical Research Council working on Tuberculosis.

*Symposium Neuroradiologicum, London.* The attention of Radiologists and others who are interested is drawn to this Congress, which will be held in London on 13-17 September 1955. Leading neuro-radiologists from almost every European country, the British Commonwealth, the United States of America and South America will be delivering papers. Subjects for discussion include (1) cerebrovascular disease, (2) the localization of intracranial tumours by means of isotopes, (3) applications of stereotaxometry, (4) new techniques, and (5) proffered papers on a variety of neuro-radiological subjects. It is hoped to arrange a Joint

Scientific Session with delegates to the 2nd International Congress of Neuropathology, one half-day during the week. A programme has been arranged for lady Associate Members, and there will be evening functions in addition to a dinner. Application forms for membership, etc., may be obtained from the Hon. Secretary of the Radiological Society of South Africa, Dr. M. H. Fainsinger, 318 Pan Africa House, Troye Street, Johannesburg.

*The Pharmacology and Clinical Use of Chlorpromazine.* A Symposium has been arranged by the Department of Anaesthesia, Groote Schuur Hospital, Cape Town, on *The Pharmacology and Clinical Use of Chlorpromazine*. This is to be held on Friday evening, 20 May at 8.15 in the Physiology Lecture Theatre at the Medical School, Mowbray. The Symposium is intended largely to cater for the needs of students and Registrars, but any member of the profession who may wish to attend will be welcome.

*Dr. W. J.* is visiting the Inter 5 June 1 being of asked to the mal Genera go to L matters.

*Mr. R. L.* has returned at 601 N 23-6929.

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*Antise Treatm Edition E. & S*

*Contents:* 3. Method and Serum venoms. Immunizat Dick Test zation aga Tetanus ar

Dr. W. J. Hugo, Medical Director of Hospital Services, Transvaal, is visiting Switzerland to attend the International Congress of the International Hospital Federation at Lucerne on 28 May-5 June 1955. The subject of the Congress is *The Mental Well-being of Patients in General Hospitals*, and Dr. Hugo has been asked to speak on the administration, staffing, etc., as affecting the main theme. He has also been invited to take the chair of the General Planning Committee on Hospitals. Dr. Hugo will also go to London for certain special investigations into hospital matters.

\* \* \*

Mr. R. D. Venn, M.B., Ch.B., F.R.C.S. (Eng.), F.R.C.S. (Edin.), has returned from overseas and commenced practice as a Urologist at 601 Medical Centre, Jeppe Street, Johannesburg. Telephone 23-6929.

*Union Department of Health Bulletin.* Report for the 7 days ended 28 April 1955.

*Plague, Smallpox:* Nil.

*Typhus Fever, Cape Province:* One (1) Native case in the Glen Grey Magisterial district. Diagnosis confirmed by laboratory test.

No further cases have been reported from Queenstown and Willowvale districts since the notification of 29 March 1955. These areas are now regarded as free from infection.

*Epidemic Diseases in other Countries:*

*Plague:* Nil.

*Cholera in Calcutta (India); Chittagong (Pakistan).*

*Smallpox in Phnom-Penh (Cambodia); Allahabad, Bombay, Calcutta, Delhi, Jodhpur, Kanpur, Madras (India); Dacca, Karachi, Lahore (Pakistan); Saigon-Cholon, Tourane (Viêt-Nam).*

## BOOK REVIEWS : BOEKRESENSIES

### THE BRITISH NATIONAL FORMULARY

*The National Formulary.* By the Joint Formulary Committee. Pp. 210. 5s. London: The British Medical Association and The Pharmaceutical Society of Great Britain. 1955.

*Contents:* 1. Preface. 2. Notes for Prescribers. 3. Prescriptions for Dangerous Drugs. 4. Prescriptions for Schedule IV Poisons. 5. General Notices. 6. Pharmacological Classification. 7. Formulary. Appendices. Index.

This issue of the National Formulary represents the third edition of a most useful reference pocket book. The Joint Formulary Committee comprised of some 39 representatives of the medical and pharmaceutical profession has made the book suitable for various professional needs. The previous attempt in the 1952 edition (reviewed in this *Journal*, 21 November 1953, (27, 1067) to be modern and use English headings in preference to Latin did not apparently meet with favour, so that one finds now a reversal to Latin nomenclature, but only as far as main titles are concerned; in the formulae themselves English names for the drugs are used. Other changes have been introduced to facilitate reference and cross-reference. The pages of the section dealing with prescriptions for infants are coloured light blue, a useful innovation. New material has been added. A certain amount of pruning has been done but not as much as some would desire: the reason being that preparations that have traditional value and which are still frequently prescribed have still to be retained. The valuable lengthy lists of proprietary preparations for which there are equivalent Formulary or official preparations have been extended and indexed, and the list of approved names has been revised.

Readers will be aware of the Hospitals Formulary compiled for use in the Cape Provincial hospitals (first edition, 1954), which was reviewed in this *Journal*, 26 February 1955, 29, 218. This local formulary will come to be widely used in this country, and in future editions no doubt the necessary changes and improvements will be made to bring it to its fullest value. The volume under review differs for example in being indexed more fully and in containing a section on Notes for Prescribers, in which the treatment of poisoning and concise notes on analgesics, anthelmintics, antihistaminics and so forth are provided. It is up-to-date, moderately priced, and needs no recommendation.

### ANTISERA, TOXOIDS, VACCINES AND TUBERCULINS

*Antisera, Toxoids, Vaccines and Tuberculin in Prophylaxis and Treatment.* By H. J. Parish, M.D., F.R.C.P.E., D.P.H. Third Edition. (Pp. 227 + x with illustrations. 21s.) Edinburgh. E. & S. Livingstone Ltd. 1954.

*Contents: Part I. General.* 1. The Uses of Serological Preparations. 2. Immunity. 3. Methods of Administration of Antigens and Antibodies. 4. Serum Reactions and Serum Sensitivity Tests. *Part II.* 5. Antisera. 6. Antitoxic Sera. 7. Antivenoms. 8. Antibacterial Sera. 9. Antiviral Sera. *Part III.* Products for active immunization and Some Diagnostic Reagents. 10. The Schick Test and Active Immunization against Diphtheria. 11. Combined Active Immunization. 12. The Dick Test and Active Immunization against Scarlet Fever. 13. Active Immunization against Staphylococcus Infections. 14. Active Immunization against Tetanus and Gas Gangrene. 15. Bacterial Vaccines—I. 16. Bacterial Vaccines—II.

17. Tuberculins. 18. B.C.G. and Vole-Bacillus Vaccines. 19. Active Immunization against Virus and Rickettsial Diseases—I. 20. Active Immunization against Virus and Rickettsial Diseases—II. 21. Historical. Suggestions for Further Reading. Index.

This book now appearing in its 3rd edition has an altered title, the words 'Bacterial and Virus Diseases' no longer prefixing the remainder of the title.

In his preface the author states that considerable progress has been made in immunology during the last 3 years and it is now a well-established science. How true that statement is!

The writer deals in detail with the subject of combined active immunization against diphtheria, tetanus and pertussis. He describes a recommended method of immunization during early life against these diseases. The problem of whether to inoculate against diphtheria and pertussis during a prevailing poliomyelitis epidemic is also raised. Mention is made too of combined immunization against tetanus and enteric fever.

Attention is paid to the role of B.C.G. and vole-bacillus vaccines in the campaign against tuberculosis. With regard to the vole-bacillus vaccine considerable research is in progress with a view to testing its efficacy. (A recent article by Wells and Wylie\* puts forward a plea for the use of the vole-bacillus vaccine.)

In the section on viruses poliomyelitis, now very topical in South Africa, is discussed and the author states that practical vaccines may be available within the next few years though the cost of production will be high.

The work concludes with an historical section and at the end of the book the author lists a series of references which he recommends for further reading.

This 3rd edition should prove of the greatest assistance to the practitioner and public health official. The concise manner each subject is dealt with, and the clearly tabulated index, make it an ideal book for reference.

C.S.H.

\* Wells and Wylie. *British Medical Bulletin* Vol. 10 No. 2. 1954. Page 96.

### HUMAN BIOCHEMISTRY

*Human Biochemistry.* By Israel Kleiner, Ph.D. Fourth edition. (Pp. 746 with 93 text illustrations and 5 colour plates. £3 3s. 9d.) St. Louis: The C.V. Mosby Company. 1954.

*Contents:* 1. Introduction. 2. Physical Chemistry. 3. Carbohydrates. 4. Lipids. 5. Proteins. 6. Tissues. 7. Milk. 8. Blood. 9. Enzymes. 10. Digestion. 11. Chemical Changes within the Large Intestine. 12. Vitamins. 13. Foods. 14. Physiological Oxidations. 15. Nitrogen Metabolism. 16. Carbohydrate Metabolism. 17. Lipid Metabolism. 18. Mineral Metabolism and Water Balance. 19. Urine. 20. The Chemistry of Respiration and Acid-Base Balance. 21. Energy Metabolism. 22. Changes in the Chemical Composition of Blood. 23. Hormones. 24. Chemical Structure in Relation to Biological Phenomena. 25. Recent Clinical Applications. Appendix.

It is stated in the preface to the first edition that this book is intended for medical students. The method of presentation is old-fashioned, but is to be recommended in so far as it starts by

dealing with the basic principles and reactions underlying the processes discussed. This occupies the first quarter, but thereafter the method leads to reduplication, some subjects being dealt with four times over, in varying minuteness of detail.

The last third of the book attempts to cover practically the whole field of pathological chemistry, and suffers the fate of such a degree of compression—indigestibility, misleading over-simplification and even some quite incorrect statements. A contributing factor is possibly that no less than 36 people are thanked in the preface for 'searching criticism of various chapters or large sections'.

On page 475, we are told that removal of the parathyroids increases urinary calcium, but on page 619 we are correctly told that the opposite occurs. Few people would agree that 'Proliferation of islet tissue, i.e. tumour of the pancreas, frequently occurs' (page 441), nor would they agree that the urea in the glomerular filtrate is not affected by the renal tubules (page 517). It is surprising to find in a text-book published in 1954 that the Tocantins theory of a thromboplastin destroyer as the cause of haemophilia is given

equal prominence with that of anti-haemophilic globulin—'the assumption is that this unidentified factor is associated with the globulins' (page 188). Christmas factor is not mentioned though discussion is otherwise very full.

On the other hand, a clear exposition is provided of the inter-relations between fat, protein and carbohydrate, and of their inter-convertibility at the tricarboxylic acid cycle level in intermediate metabolism. The section on the nomenclature and relationships of the sterols is also very clear.

This book can be thoroughly recommended as a reference book for clinicians and pathologists wishing to learn more about the basic biochemistry of any field in which they are interested, but biochemists interested in the physiological and pathological applications of their fields of study would be well advised to consult one of the standard text-books dealing with those fields only.

As now has come to expect from the C.V. Mosby Company, the reproduction is of a high standard throughout.

C.R.M.

## CORRESPONDENCE : BRIEWERUBRIEK

### OBSCURE CASES OF DIPHTHERIA

*To the Editor:* I found Dr. Rieck's account<sup>1</sup> of two obscure cases of diphtheria most interesting and constructive.

I would add that where mass inoculation is not practised, the bull-neck of diphtheria—especially amongst children—is relatively common.

I would submit this corollary too: Never wait for the appearance of membrane where tracheotomy is indicated. Respiratory and cardiac distress are the sole indications. I have performed this operation on 3 occasions where no membrane was ever present. The infection fulminated in the laryngeal tissues only.

H. Rupert

Postmasburg  
1 May 1955

1. Rieck, A. (1955): S. Afr. Med. J., 29, 396 (23 April).

### TREATMENT OF TUBERCULOSIS BY THE GENERAL PRACTITIONER

*To the Editor:* We should like to comment on the article entitled 'n Oorsig vir die Algemene Geneesheer van die Tipiese Behandeling van 'n Geval van Tuberkulose'<sup>1</sup> which appeared in your issue of 16 April 1955. We found the article very interesting in that it described the successful treatment of a severe case of tuberculosis which almost certainly would have died before the introduction of the new antibiotics, and also in that it drew attention to the greater simplicity of the modern management of tuberculosis.

However, the article states specifically that the case has been described in order to give the general practitioner more confidence in the everyday medical handling of tuberculosis. This, we feel, may encourage general practitioners to undertake the treatment of tuberculosis on an even wider scale than is at present the practice.

Our experience in conducting a tuberculosis domiciliary practice in Alexandra Township during the past 3 years, under specialist supervision, has led us to believe that the treatment of tuberculosis, although far simpler than it was a few years ago, is still a specialized branch of medicine, and should not be undertaken by general practitioners without specialist supervision. We have found that general practitioners have often given sporadic therapy, depending on the patient's ability to pay; they have often failed to notify cases to the relevant local authority immediately, thereby delaying the investigation of contacts; in addition they have frequently instituted therapy without adequate prior X-ray and laboratory investigation.

In spite of the increased simplicity of treatment and the considerable success which has been achieved through domiciliary hospital treatment in many parts of South Africa, it would be extremely unwise, in our opinion, to encourage general practitioners to undertake anti-tuberculosis therapy as a general rule. Patients do not respond uniformly to treatment, and each individual case requires long-term planning and repeated reassessment by specialists. In addition, the ancillary services of contact and source tracing, health education, and social welfare, are indispensable to the conduct of the treatment of tuberculosis.

We therefore wish to emphasize that although tuberculosis can be treated by general practitioners on domiciliary lines or in hospital with considerable success, this treatment should only be conducted under the supervision of specialists, and in collaboration with the general public health administration in each area.

M. A. Cormack, M. K. S. Hathorn, Z. A. Stein, M. W. Susser  
Alexandra Health Centre and University Clinic  
P.O. Bergvlei  
Johannesburg  
22 April 1955

1. Swart, D. J. (1955): S. Afr. Med. J., 29, 353.

### MEDICAL AID SOCIETY PRACTICE : OVERDUE ACCOUNTS

*To the Editor:* Through the medium of your columns we wish to draw the attention of members of the Medical Association to the fact that in terms of an agreement between Medical Aid Societies and the Central Committee for Contract Practice, Medical Aid Societies cannot be held responsible for accounts over 6 months old. Practitioners are advised, however, that after 3 months, they are entitled to send any account which has not been paid direct to the Society with a note attached, stating 'Over 3 months old—please investigate'.

Medical Aid Society members have repeatedly been advised that their Society's liability automatically lapses in respect of accounts over 6 months old. In order to eliminate any unnecessary unpleasantness, Medical Aid Societies urgently request the co-operation of medical practitioners.

R. S. Ewing

Advisory Council of Medical Aid Societies

P.O. Box 8394  
Johannesburg  
19 April 1955

### TEXT OF RESOLUTION

*To the Editor:* It has been brought to my notice that a resolution taken at the annual general meeting of the Medical Officers of Health Group held in Port Elizabeth in 1954 and quoted in your journal has led to misunderstanding and misinterpretation in some quarters. The resolution reads as follows:

'That in the case of non-European employees injured on duty, the Council of a local authority may, if it so desires, permit one of its medical officers to treat such cases and to retain the fee payable by the Workmen's Compensation Commissioner, in terms of the Ethical Rules of the South African Medical and Dental Council.'

I should be pleased if this original resolution could be published in your journal.

P.O. Box 1477  
Johannesburg  
25 April 1955

A. H. Smith  
Hon. Secretary  
M.O.H. (State Medicine) Group of M.A.S.A.